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MEDICINAL & AROMATIC PLANTS ABSTRACTS

REPORTING CURRENT WORLD LITERATURE

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The Treatise on Indian Medicinal Plants

Editors: Asima Chatterjee and Satyesh Chandra Pakrashi

Pages: 172
Price: Rs. 250/-

Ayurveda, the indigenous system of medicine, advocates the application of various Indian herbs in curing many maladies. Several drugs of plant origin are used in Ayurveda.

The Treatise on Indian Medicinal Plants, Vol. I, the first in a series of six volumes, covers 111 plants. The write-up on each plant includes its vernacular name, occurance and distribution, botanical description, and therapeutic uses along with important chemical constituents of the plant extract. A distinctive feature of the book is inclusion of authentic Sanskrit *slokas*, both in Devnagri and Roman scripts. The *slokas* explain the therapeutic uses of individual plants. A glossary gives the meanings of Sanskrit/Ayurvedic and medical terms. Also, a list of books referred to has been given for ready reference.

The book is profusely illustrated with both coloured and black and white pictures to enable proper identification of plant species.

The editors of the book are eminent scientists in the field. Professor Chatterjee, a Padma Bhushan and a winner of the S.S. Bhatnagar Award, is a chemist of world repute. She is currently the coordinator of the Centre of Advanced Studies on Natural Products, Department of Pure Chemistry, Calcutta University. Dr Pakrashi, the former Director of Indian Institute of Chemical Biology, Calcutta and a Fellow of the Indian National Science Academy is at present a Distinguished CSIR Fellow.

This volume would prove immensely useful to teachers, researchers and specialists in the field of Ayurveda and medicinal plants.

Insight into Scientific Research in Indian Universities & the Institutes of Technology

Rais Ahmed and Madhulika Rakesh

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Price : Rs 140/-

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Insight into Scientific Research encompasses an exhaustive yet interesting study of the quality, character and efficiency of scientific research in Indian universities and other research institutions.

Several recommendations ranging from adequate financial support, reform of education leading to research, and utilization of research results would enlighten the reader. The book also throws light on what should be the research policy for Indian universities and research institutions.

One of the authors, Professor Ahmed, a Padma Bhushan is a renouned physicist. At present he is Executive Director of the Tertiary Education Commission in Mauritius. The coauthor Ms. Rakesh is an experienced researcher in the field of investigating conditions, process and value systems of scientific research.

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MAPA has made significant progress within thirteen years of its existence and attracted the attention of several international agencies. Bilateral collaboration has been entered into with some member countries of Association for Science Cooperation in Asia (ASCA) for sending inputs from their respective countries for MAPA.

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Medicinal & Aromatic Plants Abstracts

VOLUME 14 NO 6 DECEMBER 1992

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Agronomy

9206-3455 Balasubrahmanyam, V.R., Chaurasia, R.S.(National Botanical Research Institute, Lucknow 226 001, UP, India) **Irrigating betelvine plantations the right way.** *Indian Horticulture*, v. 36(4): p. 16-17,26, 1992 (1 ref, Eng).

Different methods used for the irrigation of *P.betle* viz., pot irrigation, sprinkler irrigation, wind-mill dependent photovoltaic pump and low-power portable pump irrigation method has been discussed.

9206-3456 Emongor, V.E., Chweya, J.A., Keyo, S.O., Munavu, R.M. (University of Nairobo, Department of Crop Science, P.O.Box 299053, Nairobi, Kenya) **Effect of nitrogen and phosphorus on the essential oil yield and quality of chamomile (Matricaria chamomilla L.) flowers.** *East African Agricultural and Forestry Journal*, v. 55(4): p. 261-264, 1990 (25 ref, Eng).

Nitrogen significantly increased essential oil yield of *M.chamomilla* and influenced its composition, phosphorus at lower concentrations enhanced essential oil yield. Application of 17.47 kg P/ha transplanting and top dressing later with 50kg N/ha gave best results.

9206-3457 Jha, R.R., Pan, T., Varma, S.K(Department of Botany, Bhagalpur University, Bhagalpur 812 007, Bihar, India) **From wilderness to gardens: Costus speciosus var. variegatus.** *Indian Horticulture*, v. 36(4): p. 4-5, 1992 (Eng).

Cultivation methods, lifting, storage, control of pest and diseases of a wild variegated form of *C.speciosus* collected from Rajmahal hills of Santhal Pargana of Bihar have been discussed.

9206-3458 Nair, G.P.K.(Coffee Board, Kalpetta, Karnataka, India) **Pepper- a good intercrop in coffee plantations.** *Indian Coffee*, v. 56(7): p. 7-8, 1992 (Eng).

Method of cultivation of *Piper nigrum* in the fields of coffee has been described briefly. Planting pepper along the side of footpaths and roads and also along the border is recommended to avoid over shadowing.

9206-3459 Pant, P.C., Verma, G.S., Pant, T.(Defence Research and Development Organisation, Defence Agricultural Research Laboratory, Pithoragarh 262501, India) **Exploration and possibility of cultivation of Ammi majus on Kumaon hills.** *Journal of Research and Education in Indian Medicine*, v. 11(2) p. 25-26, 1992 (8 ref, Eng).

A.majus a medicinal plant of rich commercial source of Xanthotoxin was found suitable for cultivation on Kumanon hills. Package and practices for the commerical cultivation of the plant along with its uses are described.

9206-3460 Pruthi, J.S.(Carishma Food Consultancy Services, 376 DDA Flats, Mansarovar Park, Shahdra, Delhi 110 032, India) **Post-harvest technology of spices: Pre-treatments, curing, cleaning, grading and packing.** *Journal of Spices and Aromatic Crops*, v. 1(1): p. 1-29 , 1992 (38 ref, Eng).

The post harvest technology of spices comprising of operations such as pretreatments, chemical treatments, curing, drying, cleaning, sorting, grading and packing are briefly reviewed. Wherever applicable the problems involved and the relative advantages and disadvantages of the various processes are indicated.

9206-3461 Sharma, C.K., Singh, I.P.(ICAR Researnch Complex for NEH Region, Tripura Centre, Dembuehima, 799210, West Tripura, India) **Response of amount of pruning to the growth and flowering of Jasminum samac in cv. Gundumalli.** *Haryana Journal of Horticultural Sciences*, v. 20(3-4): p. 176-182, 1991 (6 ref, Eng).

Pruning (i.e. all branches, 4,8,12,16,20,24,28, branches per plants) was found beneficial for improving floral yield and quality and vigour of the plants of *J.sambac* but too less as well as too severe branched pruning was inferior to medium branched pruning. Maximum flower yield as well as number per plant was recorded on plants pruned to 28 followed by 24 branches with acceptable flower quality. Other treatments improved flower quality but declined flower yield. NSL, New Delhi.

9206-3462 Subbi Reddy, G., Krishnan, R.(Indian Institute of Horticultural Research, Bangalore 560 089, Karnataka, India) **Yield response of diploid and induced autotetraploids of Solanum viarum under high density planting.** *Indian Journal of Agricultural Sciences*, v. 62(8): p. 551-553, 1992 (6 ref, Eng).

High density planting in *S.viarum* was found conducive for high dry-berry yield in both diploid and tetraploids. Solasodine yield increased with an increase in planting density up to 49,000 plants/ha. 85 percent increase in solasodine yield was observed in autotetraploids, with increased plant population/ha from 18,000 (84 kg/ha 1) to

49,000 (156 kg/ha). Dry-berry yield/plant and dry-berry yield/ha was higher in diploids.

9206-3463 Subrahmanyam, K., Nair, A.K. , Chattopadhyay, A., Singh, D.V.(Central Institute of Medicinal and Aromatic Plants, Lucknow 226 016, UP, India) **Evaluation of ammonium polyphosphate as phosphorus source in Japanese mint (Mentha arvensis subsp. haplocalyx var. piperascens).** *Indian Journal of Agricultural Sciences*, v. 62(8): p. 554-556, 1992 (12 ref, Eng).

Application of P significantly increased the yields of herbage and essential oil. Maximum menthol content (90.6 percent) was recorded with 30 kg P/ha. The yield obtained from single superphosphate was significantly lowest (16.4 t and 116.7 kg/ha of herbage and oil). The yield obtained on application of diammonium phosphate was equal to that obtained from ammonium polyphosphate (granular) and ammonium polyphosphate (liquid).

9206-3464 Tikader, A., Das, C., Misra, A.K. , Roychowdhuri, S. (Regional Sericultural Research Station, Central Sericultural Research and Training Institute, Kalimpong, 734 201, WB, India) **Intercropping of mulberry (Morus species) with ginger (Zingiber officinale), turmeric (Curcuma longa) and field pea (Pisum sativum) under hilly regions of West Bengal.** *Indian journal of Agricultural Sciences*, v. 62(8): p. 523-526, 1992 (4 ref, Eng).

The leaf yield of mulberry decreased in combination with the rhizomatous crops; more with ginger (17.33 percent) than with turmeric (8.43 percent). When field pea was included in the intercropping system, the leaf yield of mulberry increased by 16.93 percent compared with the crop combination with turmeric, but slightly lower (1.99 percent) than the combination with ginger. However, field pea showed significant improvement in seed yield under intercropping compared with sole-crop yields under all combinations except turmeric with mulberry and field pea, which showed improvement in rhizome yield by 10.98 percent.

9206-3465 Vadiraj, B.A., Rama Rao, K.V.V., Naidu, R.(Indian Cardamom Research Institute, Myladumpara, Idukki, Kerala 685 553, India) **Effect of biostimulants on the growth and biomass of secondary nursery seedlings of cardamom.** *Journal of Spices and Aromatic Crops*, v. 1(1): p. 75-80 , 1992 (14 ref, Eng).

A nursery experiment was undertaken at the Indian Cardamom Research Institute, Myladumpara to understand the effect of biostimulants on the growth and biomass of secondary nursery cardamom (*Elettaria cardamomum*) seedlings. Five biostimulants at different concentrations were sprayed at 30-day intervals for a period of 120 days. The results indicated that biostimulants such as vipul (a tricontanol - containing commercial products), Ergostim (N-acetyl thiazolide-4-carboxylic acid and folic acid - containing commercial products), pure folic acid, low levels of simazine and 2,4-d significantly increased the growth and dry matter production. The results suggest, that application of biostimulants not only reduces the nursery period but also helps in getting vigorous seedlings for better establishment in the field.

Botany (General & Systematic)

9206-3466 Amalraj, V.A., Velayudhan, K.C. , Muralidharan, V.K. (National Bureau of Plant Genetic Resources, Regional Station, Trichur 680 654, Kerala, India) **Curcuma aurantiaca van Zijp. (Zingiberaceae)- A new record for India.** *Indian Journal of Forestry*, v. 15(1): p. 88-89, 1992 (2 ref, Eng).

Botanical description of *C.aurantiaca*, reported for the first time from India and its relationship with *C.parviflora* and *C.ecalcarata* have been discussed.

9206-3467 Beltrati, C.M.(Departmento de Botanica, Instituto de Biociencias, UNESP Caixa Postal 178 13500 Rio Claro, SP) **(Morphological and anatomical studies on seeds and seedlings of Esenbeckia febrifuga (St.Hill) A.Juss. ex Mart.(Rutaceae).** *Naturalia, Sao Paulo*, v. 16: p. 161-170, 1991 (13 ref, Eng, Spa).

Morphological and anatomical aspects of the seeds and seedlings of *E.febrifuga* have been described and illustrated, emphasizing the seed coat structure and development.

9206-3468 Doohan, D.J., Monaco, T.J.(Department of Horticultural Science, North Carolina State University, Raleigh, NC 27606-7609, USA) **The biology of Canadian weeds. 99. Viola arvensis Murro..** *Canadian Journal of Plant Science*, v. 72(1): p. 187-201 , 1992 (75 ref, Eng, Ger).

V.arvensis field violet, is distributed in all Canadian provinces and most of the continental United States. It is one of the most common weeds associated with grain production in Europe and tolerates most herbicides used in production of grains and many other crops. Sélective pressure from increased herbicide use and long grain rotations appears to be responsible for incrased frequency and density of *V.arvensis* in a number of important crops. Its biological data like morphology and cytology, geographical distribution, habitat, history of its origin, reproduction, diseases and pest along with economic importance are given.

9206-3469 Kapur, S.K., Shahi, A.K., Sarin, Y.K., Moerman, D.E. (Regional Research Laboratory, Canal Road, Jammu Tawi 180001, JK, India) **The medicinal flora of Majouri-Kirchi forests (Jammu and Kashmir State) India.** *Journal of Ethnopharmacology*, v. 36(1): p. 87-90 , 1992 (10 ref, Eng).

Using the method of regression and residual analysis-a vegression analysis of the number of medicinal species per family on the total number of spices in each family for 106 flowering plants families in region was carried out. Among families with a large number of plants are Asteraceae, Euphorbiaceae, Ranunculaceae, and Lamiaceae. Among the low use familes are Poaceae, Papilionaceae, Uriticaceae, Anacardiaceae and Brassicaceae.

9206-3470 Kumar, S.(Botanical Survey of India, Sikkim Himalayan Circle, Gangtok 737101, Sikkim, India) **Turmeric (Curcuma longa L.) and related taxa in Sikkim Himalaya.** *Journal of Economic and Taxonomic Botany*, v. 15(3): p. 721-724, 1991 (3 ref, Eng).

The genus *Curcuma* is represented by 5 species viz., *C.angustifolia, C.aromatica, C.caesia, C.longa* and *C.zedoaria* growing in different altitudinal zones of Sikkim Himalaya. Of these *C.longa, C.aromatica, C.caesia* are used in condiments, medicine and perfumes, while *C.angustifolia* and *C.zedoaria* in production of arrowroot from their rhizomes. Taxonomy, distribution and economical aspects of all these species are discussed in this communication.

9206-3471 Nadeau, L.B., Dale, M.R.T., King, J.R.(Northern Alberta Institute of Technology, Biological Sciences Program 11762-106 St., Edmonton, Alta., Canada T5G 2R1) **The development of spatial pattern in shoots of Linaria vulgaris (Scrophulariaceae) growing on fallow land or in a barley crop.** *Canadian Journal of Botany*, v. 69(11): p. 2539-2544 , 1991 (18 ref, Eng, Fre).

L.vulgaris root pieces 10 cm long with 10 cm tall shoots were planted with a barley crop and on fallow land in 1988 and 1989. Positions of new shoots were recorded once a week throughout both summers. Densities of stands growing on fallow land were similar in both 1988 and 1989, ranging from 167 shoots m-2 in August to 247 shoots m-2 in October. Densities of stands growing with a barley crop varied between years, ranging between 1587 and 539 shoots m-2 from August to Octobr in 1988 and being relatively stable at 95 shoots m-2 between August and October in 1989. Stand diameter was consistently greater when on fallow land than in barley, with a maximum diameter of 1m in 1988 and 2m in 1989 when on fallow land, and a maximum diameter of 40 cm in 1988 and 1 m in 1989 in barley. In both years, new shoots produced in a week emerged in primary clumps 5-10 cm in diameter, and these were aggregated into secondary clumps that grew larger with time. Primary clumps on fallow land were produced in rings around initial stands, whereas when growing with barley they were scattered around and within initial *L.vulgaris* stands.

9206-3472 Shylaja, M., Manilal, K.S.(Providence Women's College, Calicut 673 009, Kerala, India) **Bark anatomy of four species of Cinnamomum (Lauraceae) from Kerala.** *Journal of Spices and Aromatic Crops*, v. 1(1): p. 84-87 , 1992 (8 ref, Eng).

Bark anatomy of four species of Cinnamomum - three cultivated *C.verum, C.cassia, C.camphora* and the most common wild cinnamon *C.malabatrum* are reported. These species differ with regard to many characters such as the nature of the sclerenchymatous groups in the pericyclic region, nature of the phloem rays, distribution of phloem fibres and in the presence of crystalline inclusions. The differences in the bark structure are useful in the identification of the true cinnamon *C.verum* bark and also in the taxonomy of the genus.

9206-3473 Sugihara, Y.(1-3-1-101 Takeshirodal, Sakai Osaka, 59001, Japan) **The embryology of Biota orientalis Endlicher and the secondary cleavage polyembryony in Coniferales.** *Journal of Japanese Botany*, v. 67(2): p. 83-87, 1992 (14 ref, Eng).

In *B.orientalis* the secondary cleavage polyemnbryong was always observed. The secondary cleavage polyembryony was also found in *Cunninghamia laneolata* and also in *Chamaecyparis pisifera*, which may be considered one of the evolutionary tendencies in conifers.

9206-3474 Tewary, P.K., Dutt, B., Subba Rao, G.(Central Sericultural Research and Training Institute, Berhampore 742 101, Orissa, India) **Useful weeds in mulberry fields of Ramgiri, Orissa.** *Journal of Economic and Taxonomic Botany*, v. 15(3): p. 529-538, 1991 (6 ref, Eng).

Of about 100 weed species collected from Ramgiri mulberry fields in different seasons, 65 species belonging to 26 families and 58 genera, mostly of medicinal value, are described alongwith the habit in brief and their economic importance. Botanical names, local names followed with original citation, family names in parenthesis, flowering and fruiting data, their native country/region for each species are given. Abundance and rareness of the species has been calculated.

9206-3475 Upadhyay, N., Trivedi, B.S., Verma, C.L.(Botany Department, Lucknow University, Lucknow, UP, India) **Foliar epidermal studies in Indian Jasminum.**

Bulletin Botanical Survey of India, v. 31(1-4): p. 136-148, 1989 (11 ref, Eng).

Epidermal structures including their appendages in thirty three species of *Jasminum* and various types of stomata including the abnormalities have been reported. Trichomes which are the characteristic of this genus have been observed in all the investigated species. Cuticular striations and other important feature are also discussed in detail. Giant stomata and domatia are recorded for the first time in this genus.

9206-3476 West, M.M., Lott, J.N.A.(Department of Biology, McMaster University, Hmilton, Ont., Canada L8S 4K1) **A histogical and elemental analysis study of the mature seed of Begonia semperflorens.** *Canadian Journal of Botany*, v. 69(10): p. 2165-2169 , 1991 (28 ref, Eng, Fre).

The major storage substances in the seed of *B.semperflorens* were lipids sequestered in lipid vesicles and proteins concentrated in protein bodies. Transmission electron microscopy revealed the presence of protein crystalloids and electron-dense globoid crystals in the protein bodies. These inclusions varied both in size and number in protein bodies from different tissues. Energy dispersive X-ray analysis of the globoid crystals showed the high Mg,K, and P levels characteristically found in phytin from large-sized seeds. Small traces of Ca were found in globoid crystals within protein bodies found in the provascular tissue of the embryo. Neutron activation analysis was used to measure the elemental composition of the whole seed and these results were correlated with the findings of energy dispersive X-ray analysis studies of globoid crystals.

Breeding & Genetics

9206-3477 Kloet, S.P.V.(Biology Department, Acadia University, Wolfville, N.S., Canada BOP IXO) **The consequences of mixed pollination on seed set in Vaccinium corymbosum.** *Canadian Journal of Botany*, v. 69(11): p. 2448-2454 , 1991 (22 ref, Eng, Fre).

Self pollen of *V.corymbosum* germinates as well as outcross (compatible) pollen from the same population and more rapidly than compatible pollen from more distant populations. When a mixture of self and compatible pollen, either from the same or incontiguous populations, is applied to the stigma, the time required for berry ripening is significantly reduced compared with compatible pollen alone, although seed set also decreases significantly. Adding compatible pollen from different pollen donors significantly increased seed set but also increased the time for berry maturation by 5 days. Self pollen in conjunction with compatible pollen resulted in a 50 percent loss of viable seed production and an 8 percent gain in berry maturation time. Self-pollination resulted in embryo abortion in *V.corymbosum.*

9206-3478 Lal, R.K., Misra, H.O., Singh, S.P. , Sharma, S., Sharma, J.R.(Central Institute of Medicinal and Aromatic Plants, Lucknow 226 016, UP, India) **Choice and improvement of superior genetic stocks of senna (Cassia angustifolia).** *International Journal of Pharmacognosy*, v. 30(1): p. 56-60, 1992 (7 ref, Eng).

Useful statistical and genetic parameters were developed in 49 germplasm collections of senna obtained from different states of India. Genetic variability was high for pod and seed yields but moderate for leaf yield. Broad sense heritability was also high for all traits except number of branches. The three important traits, viz., dry leaf yield, dry pod yield and seed yield manifested high heritability in broad sense coupled with, high GA and the latter two traits were favourably correlated as well, hence most amenable for straight selection. Potentially superior parents were also identified for genetic improvement of senna.

9206-3479 Mathew, K.L., Krishnan, R. ; Chandravadana, M.V.(College of Horticulture, Vellanikkara 680 654, Thrissur, Kerala, India) **Yield performance of eutetraploids and aneuploids in Solanum viarum Dunal.** *Indian Drugs*, v. 29(10): p. 424-427, 1992 (7 ref, Eng).

Twenty three lines (including five chromosomal numbers) compared for autotetraploid breeding showed no significant difference among the five chromosomal lines. Dry berry yield and its components also exhibited the same trend. Aneuploidy did not impair their performance as parents in the economic characters like solasodine content and dry berry yield.

9206-3480 Mathew, P.J., Mathew, P.M.(Tropical Botanic Garden & Research Institute, Palode, Trivandrum 695 562, Kerala, India) **Cytological studies on Piper barberi- a rare species endemic to Western Ghats.** *Journal of Spices and Aromatic Crops*, v. 1(1): p. 81-84 , 1992 (9 ref, Eng).

The somatic chromosome number of *P.barberi*, a rare species of *Piper* from Western Ghats, is reported to be $2n=52$. The meiosis is normal and pollen fertility is high.

9206-3481 Mohamed, A.I., Rangappa, M.(Cooperative State Research Service, Virginia State University, Petersburg, VA 23803, USA) **Screening soybean (grain and vegetable) genotypes for nutrients and anti-nutritional factors.** *Plant Foods for Human Nutrition*, v. 42(1): p. 87-96 , 1992 (42 ref, Eng).

Fifty six genotypes of grain-type soybean and 17 genotypes of vegetable-type soybean collections were analyzed for protein and oil content, trypsin inhibitor, and lipoxygenase activities. The protein and oil content ranged from 36.9 to 47.9 percent and from 13.3 to 23.0 percent for different accessions in grain and vegetable-type soybeans, respectively. Trypsin inhibitor and lipoxygenase activities ranged from 22.0 to 47.0 trypsin inhibitor units/mg meal and from 482 to 6265 lipoxygenase units/min/mg meal for grain- and vegetable-type soybeans, respectively. Significant correlations were found between protein and oil, and between protein and trypsin inhibitor and also calculated for oil and lipoxygenase activity. Several genotypes of soybean and vegetable soybean showed good nutritional protential and may be useful in a breeding program to improve the nutritional quallity of soybean.

9206-3482 Nirmal Babu, K., Nair, R.R. , George J.K., Ravindran, P.N.(National Research Centre for Spices, Marikunnu P O., Calicut 673 012, Kerala, India) **Piper barberi Gamble - a redescription of the species with a note on the karyotype.** *Journal of Spices and Aromatic Crops*, v. 1(1): p. 88-93 , 1992 (5 ref, Eng).

{P.barberi is a unique species among the *Piper* taxa occurring in South India. The somatic chromosome number of *P.barberi* was determined to be 2n=52.

9206-3483 Ramachandran, K., Chandrasekharan Nair, P.N.(Department of Botany, University of Kerala, Trivandrum 695 581, Kerala, India) **Induced tetraploids of ginger (Zingiber officinale Rosc.).** *Journal of Spices and Aromatic Crops*, v. 1(1): p. 39-42 , 1992 (5 ref, Eng).

Autotetraploids were produced in a clone of ginger by treating sprouting buds on the rhizome with 0.25 percent colchicine solution. The tetraploid was more vigorous in growth, had larger rhizomes and high yield. Oil content of rhizomes, however, was lower in the tetraploid than in the original diploid cultivar.

9206-3484 Voirin, B., Bayet, C.(Laboratoire de Biologie Micromoleculaire et Phytochimie, IASBE, Universite Lyon 1,43 Boulevard du 11 Novembre 1918, 69622 Villeurbanne, France) **Developmental variations in leaf flavonoid aglycones of Mentha x piperita.** *Phytochemistry*, v. 31(7): p. 2299-2304, 1992 (20 ref, Eng).

From *Mentha x piperita* leaves, 16 free lipophilic flavonoid aglycones were isolated and identified. The variation of this flavonoid composition studied by the means of HPLC techniques from the youngest to the oldest leaves shows that the A- and B-ring O-methylation patterns of leaf differ according to leaf age and would indicate the sequential activity of 4'-O- and 6-O-methyl-transferases.

Diseases & Pests

9206-3485 Joshi, K.C., Meshram, P.B., Sambath, S., Usha Kiran, Humane, S., Kharkwal, G.N.(Forest Protection Division, Institute of Deciduous Forests, Jabalpur 482 021, MP, India) **Insect pests of some medicinal plants in Madhya Pradesh.** *Indian Journal of Forestry*, v. 15(1): p. 17-26, 1992 (Eng).

The insect pests attacking eight medicinal plants of forestry origin, viz., *Cassia fistula*, *Solanum indicum*, *Operculina turpenthum*, *Psoralea corylifolia*, *Abelmoschus crinitus*, *Nyctanthes arbortristis*, *Tylophora asthmatica* and *Urginea indica* have been reported. Some of the insect species have been recorded for the first time. The status of different pests, their nature of damage and the period of occurrences have also been described.

9206-3486 Kumar, A.C.(Central Coffee Research Institute, Coffee Research Station 577117, Chikmagalur Distric, Karanataka, India) **Disorders of coffee and certain other plantation crops caused by the nematode, Pratylenchus coffeae in the South Indian coffee tracts.** *Indian Coffee*, v. 56(7): p. 3-5, 1992 (5 ref, Eng).

Symptoms of the disorders in the crops of *Coffea arabica*,*Citrus reticulata*,*Elettaria cardamomum*,*Zingiber officinale* and *Musa paradisiaca* var *sapientum* caused by the attack of *P.coffea* have been described briefly.

Physiology & Biochemistry

9206-3487 Aggarwal, M., Kaul, B.L.(Regional Research laboratory, Canal Road, Jammu Tawi 180 001, JK, India) **The radio protective effects of piperine in plants.** *Indian Drugs*, v. 29(10): p. 447-449, 1992 (17 ref, Eng).

Influence of piperine, constituent of *Piper longum* and *P.nigrum* on the biological activity of ionizing radiations has been presented. When piperine was given as pretreatment to 40 KR radiation, there was an increase in the seedling height, higher doses however, gave reduced protection. A significant reduction in the chromosomal abnormalities was induced by piperine when applied as a pretreatment.

9206-3488 Ahmad, R., Sheikh, T.U., Ahmad, A. , Ahmad, M.(PCSIR Laboratories Complex, Lahore 56 600, Pakistan) **The effect of cultural and climatic variables on the composition and formation of essential oils in the plants.** *Hamdard Medicus*, v. 35(2): p. 91-104, 1992 (62 ref, Eng).

Effect of different climatic factors, seasons, growth stages, sites, plant breeding, plant spacing, fertilizers, photoperiod, herbicides, micronutrients, gamma-irradiation and growth regulators in essential oil formation and yield has heen discussed.

9206-3489 Anjani Kumar(Botany Department, North-Eastern Hill University, Shillong 793 014, Meghalya, India) **Morphogenesis in foliar callus of an Apocynaceous tree, Thevetia peruviana L..** *Indian Journal of Experimental Biology*, v. 30(8): p. 749-750, 1992 (7 ref, Eng).

Calli were raised from leaf discs, punched from young leaves of mature tree of *T.peruviana* on Murashige and Skoog (MS) medicum supplemented with 2.26 micro M 2,4-D and 1.16 micro M kinetin. The callus transferred to the medium containing only kinetin (1.16-6.96 micro M) produced numerous (12-15)green protuberances which eventually developed into shoots. Isolated shoots were rooted on filter paper bridges in MS liquid medium containing 13.4 micro M NAA and complete plantlets were established.

9206-3490 Bir Bahadur, Chander, G.P.(Department of Botany, Kakatiya University, Warangal 506009, AP, India) **In vitro organogenesis in Plumeria acutifolia (Apocynaceae).** *Journal Phytological Research*, v. 4(1): p. 79-83 , 1991 (14 ref, Eng).

Zygotic embryo axis, cotyledon segments of *P.acutifolia* were cultured on MS basal medium supplemented with adjuvants (2,4-D, IBA, KN, BAP, CW). Profused rooting in cotyledon and normal shooting in embryo axis explants were noted. Both explants showed considerable variation for organogenesis under test combinations.

9206-3491 Bronner, R., Westphal, E., Dreger, F.(Laboratoire de Cecidologie, Institut de botanique, 28 rue Goethe, 67083 Strasbourg, CEDEX, France) **Enhanced peroxidase activity associated with the hypersensitive response of Solanum dulcamara to the gall mite Aceria cladophthirus (Acari: Eriophyoidae).** *Canadian Journal of Botany*, v. 69(10): p. 2192-2196 , 1991 (40 ref, Eng, Fre).

Peroxidase activity and its electrophoretic pattern were studied in resistant *S.dulcamara* leaves following infestation by the gall mite *Acaria cladophthirus*. Total peroxidase activity increased in infested leaves and was related to enhancement of three major peroxidase isozymes. The highest activity was found for the intercellular peroxidases. The extraction procedures of lignin barrier around the mite-induced necrotic local lesions.

9206-3492 Brun, N., Colson, M., Perrin, A., Voirin, B.(Universite Claude Bernard Lyon I, Laboratoire de biologie micromoleculaire et phytochimie, 43 boulevard du 11 Novembre 1918, F-69 622 Villeurbanne, France) **Chemical and morphological studies of the effects of ageing on monoterpene composition in Mentha x piperita leaves.** *Canadian Journal of Botany*, v. 69(10): p. 2271-2278 , 1991 (19 ref, Eng, Fre).

The effect of ageing on monoterpene composition in Mentha x piperita have been studied by analyses of microsamples obtained by coupling a desorption-concentration-introduction technique with a gas chromatogrph. The appearance and the development of the two types of glands of shoot meristem studied by scanning electron microscopy show that the capitate glands appear before the peltate glands. The chromatographic analyses of meristem and different primordial leaf pairs show that the monoterpenes are only detected if the leaf bears peltate glands and that the first cyclic compound accumulated is limonene. The biochemical variations of the reduction of menthone to menthol in the midstem leaves and of acetylation of menthol in the basal leaves start at the distal extremity of the leaf and progressively move towards the base. The maturation of the plant followed by the shift of the level of leaf in which menthone and menthol are present with the same percentage as a function of time is a linear phenomenon.

9206-3493 Costantino, I., Albasini, A. , Rastelli, G., Benvenuti, S.(Diparumento di Scienze Farmaceutiche della Universita di Modena, Via Campi 183, 1-41100-Modena, Italy) **Activity of polyphenolic crude extracts as scavengers of superoxide radicals and inhibitors of xanthine oxidase.** *Planta Medica*, v. 58(4): p. 342-344, 1992 (12 ref, Eng).

The total amount of anthocyanins and polyphenols present in the berries of several cultivars of *Ribes, Rubus and Vaccinium* genera were determined. The in vitro antiradical activity of the crude extracts on chemically-generated superoxide radicals as well as the inhibitory activity towards the enzyme xanthine oxidase were studied. All the crude extracts examined showed a remarkably high activity towards chemically-generated superoxide radicals. The activities were greater than those expected on the basis of the quantities of anthocyanins and polyphenols present in the samples. Furthermore, the extracts showed a certain inhibitory activity towards xanthine oxidase. *Ribes nigrum* extracts exhibit the highest activity, being the richest in both anthocyanins and polyphenols. On the other hand *Ribes rubrum* extracts seem to contain more active substances than the other crude extracts.

9206-3494 Court, W.A., Brandle, J.E., Robert Pocs, Hendel, J.G. (Chemistry Laboratory, Agriculture Canada, Research Station, P.O.Box 186, Delhi, Ontario, Canada N4B 2W9) **The chemical composition of somatic hybrids between Nicotiana tabacum and N.debneyi.** *Canadian Journal of Plant Science*, v. 72(1): p. 209-215 , 1992 (26 ref, Eng, Fer).

The chemical composition of somatic hybrids resulting from six separate fusion events involving *N.tabacum* and *N.debneyi* was examined in relation to that of the parental species. Nonvolatile organic acids, fatty acids, phenolic constituents, plastid pigments, tobacco alkaloids, solanesol, and individual cembranes and paraffins of the surface waxes were determined in green tissue from field grown plants. The chemical composition of the individual somatic hybrids was often intermediate between the two species; however, there were instances where the concentration of individual constituents was similar to one of the species, or where concentrations were in excess of either parental species. Given the importance of leaf quality to the value of a tobacco crop. Careful attention to chemical constituents during backcrossing and introgression is advocated.

9206-3495 Das, S.K., Sahu, B.K., Panda, S.K. , Panda, N.C. (Department of Animal Nutrition, Orissa University of Agriculture and Technology Bhubaneswar 751003, Orissa) **Proximate composition and tannins content of some tree leaves of Orissa.** *Orissa Veterinary Journal*, v. 16(3&4): p. 81-85, 1991 (Recd. 1992) (11 ref, Eng).

Leaves from 30 species from places of Orissa were collected and analysed for their proximate composition and tannins content. The composition (in percent) ranged from 9.63 to 35.08 for crude protein, 2.68-14.90 for ether extracts, 10.41 to 30.75 for crude fiber, 38.39 to 68.21 for nitrogen free extract, 2.88 to 15.62 for total ash, 0.75 to 3.94 for calcium, 0.12 to 0.75 for phosphorus and 0.67 to 7.40 for tannin on DM basis. NSL New Delhi.

9206-3496 De-Eknamkul, W., Tanahashi, T. , Zenk, M.H.*(Lehrstuhl fur Pharmazeutische Biologie, Universitat Munchen Karlstrasse 29,8000 Munchen 2, Germany) **Enzymic 10-hydroxylation and 10-O-methylation of dihydrosanguinarine in dihydrochelirubine formation by Eschschotzia.** *Phytochemistry*, v. 31(8): p. 2713-2717, 1992 (5 ref, Eng).

Two new enzymes involved in benzophenanthridine alkaloid biosynthesis, dihydrosanguinarine-10-hydroxylase and 10-hydroxydihydrosanguinarine-10-O-methyl transferase, have been found in cell-free extracts derived from *E.californica* cell suspension cultures. The hydroxylase is a microsome-associated, cytochrome P-450-dependent monooxygenase which acts specifically at C-10 of dihydrosanguinarine. The methyltransferase, enriched 60-fold and partially characterized, methylates only the hydroxyl moiety at C-10 to form dihydrochelirubine. Both enzymes were found to be highly substrate specific.

9206-3497 Evans, D.A., Kaleysa, R.R.(Department of Biochemistry, University of Kerala, Trivandrum, Kerala 695581, India) **Effect of quassin on the metabolism of catecholamines in different life stages of Culex quinquefasciatus.** *Indian Journal of Biochemistry and Biophysics*, v. 29(4): p. 360-363, 1992 (21 ref, Eng).

Quassin, a mosquito larvicide isolated from *Quassia amara*, inhibits tyrosinase activity in the larvae of *Culex quinquefasciatus*. It is suggested that quassin, as a larvicide, inhibits development of the cuticle. Monoamine oxidase (MAO), an enzyme directly involved in the metabolism of catecholamines, remained unaffected by quassin, also levels of adrenaline remained unchanged. MAP showed high variation in its activity between synthetic and natural substrates. Tyrosinase activity was high in developing stages and slow in adults and showed specificity to L-Dopa. Phyenylalanine and tyramine are unaffected by tyrosinase. Blood feeding did not influence the activity of both these enzymes.

9206-3498 Fock, A., Kettner, J., Bottger, M.(Universitat Hamburg, Institut fur Pharmazeutische Biologie, Bundesstr. 43, D-2000 Hamburg 13, Germany) **Occurrence of 4-chlorotryptophane in Vicia faba.** *Phytochemistry*, v. 31(7): p. 2327-2328, 1992 (14 ref, Eng).

Data were obtained from GC-mass spectral analyses which provided strong evidence for the presence of 4-chlorotryptophane in extracts from young seeds of *V.fava*. This serves as as a precursor molecule in the biosynthesis of 4-chloro-indole-3-acetic acid (4-Cl-IAA). Additionally 4-Cl-IAA and its methyl ester have been detected.

9206-3499 Hayashi, H., Yamada, K., Fukui, H. , Tabata, M.(Faculty of Pharmaceutical Sciences, Kyoto University, Yoshida, Sakyo-ku, Kyoto 606, Japan) **Metabolism of exogenous 18 beta-glycyrrhetinic acid in cultured cells of Glycyrrhiza glabra.** *Phytochemistry*, v. 31(8): p. 2729-2733, 1992 (12 ref, Eng).

The structures of seven triterpenoid metabolites including new compounds, 3-O-beta-D-glucurono pyranosyl-24-hydroxy-18beta-glycyrrhetinic acid and 24-hydroxy-18beta-glycyrrhetinic acid 30-beta-D-gluco pyranosyl ester, derived from exogenous 18beta-glycyrrhetinic acid administered to glycyrrhizin-free cell suspension cultures of *G.glabra* were determined. Studies on the time course of metabolism. as well as the pattern of chemical conversion of intermediate metabolites administered to cultured cells, showed that hydroxylation of the C-24 methyl group of 18beta-glycyrrhetinic acid occurs as the first step of biotransformation, which is followed by glycosylation of the hydroxyl group at C-3 with glucuronic acid and arabinose, or by glucuronic acid and arabinose, or by glucosylation of the C-30 carboxyl group. These results suggest a characteristic difference in the mode of glycosylation of 18beta-glycyrrhetinic acid between liquorice roots and cultured cells of the same plant.

9206-3500 Heath-Pagliuso, S., Matlin, S. , Fang, N., Thompson, R.H., Rappaport, L.(Plant Growth Laboratory; Department of vegetable Crops; University of California, Davis, CA 95616, USA) **Stimulation of furanocoumarin accumulation in celery and celeriac tissues by Fusarium oxysporum F.sp. ApII.** *Phytochemistry*, v. 31(8): p. 2683-2688, 1992 (41 ref, Eng).

Root and petiole tissues of *Apium graveolens* and celeriac accessions were shown to contain linear furanocoumarins (LFCs) when infected with the root fungus *F.oxysporum* f.sp.*apii* LFC levels were low (5ppm) in young celery and celeriac roots seven weeks post-inoculation, but levels as high as 50 ppm were detected in severely rotted celery root and crown tissues of mature 5270R plants. Petioles of young plants contained higher amounts than the roots. Analysis of variance showed significant differences among the genotypes for LFC content in the petioles, but there was little correlation with disease resistance. In addition to the linear furanocoumarins, angelicin, an angular furanocoumarin was detected as well. Trimethylpsoralen was not detected in any samples. The implications of elevated furanocoumarin content for human health are discussed.

9206-3501 Hemscheidt, T., Spenser, I.D.(Department of Chemistry, McMaster University Hamilton, Ontario, Canada L85 4 MI) **Biosynthesis of 6-beta-hydroxytropine in Datura stramonium: Nonregiospecific incorporation of {1,2-13C2-} acetate.** *Journal of the American Chemical Society*, v. 114(13): p. 5472-5473, 1992 (19 ref, Eng).

The incorporation of {1,2-13C2} acetate into the C3 bridge of 6beta-hydroxytropine in *Datura stramonium* has been investigated. The results show that the ring skeleton arises from ornithine and two acetate units; and N-methyl-delta'-pyrrolinium ion and hygrine are intermediates, and that the entry of the hydroxy group into the ornithine derived ring of tropine takes place late in the biosynthetic process.

9206-3502 Keisey, R.G., Vance, N.C.(USDA Forest Service, Pacific Northwest Research Station, 3200 Jefferson Way. Corvallis, Oregon 97331, USA) **Taxol and cephalomannine concentrations in the foliage and bark of shade-grown and sun-exposed Taxus brevifolia trees.** *Journal of Natural Products*, v. 55(7): p. 912-917 , 1992 (11 ref, Eng).

Taxol and cephalomannine concentrations were measured in the bark and foliage of Pacific yew trees growing in the shade of a forest canopy and at a site nearby where trees had been exposed to full sunlight for 6 years. Bark was the only tissue showing concentration differences due to light, with significantly greater quantities of both compounds in the bark of shaded trees than in the bark of sun-exposed trees. In either light regimen taxol concentrations were greater in the bark than in the needles or twigs. Taxol concentrations were higher in older needles than in younger needles, and the reverse was observed for twigs. Cephalomannine was substantially lower than taxol in concentration. Cephalomannine varied similarly to taxol among tissues of shade trees but not among tissues of sun-exposed trees.

9206-3503 Kelly, D.W., Hicklenton, P.R. , Reekie, E.G.(Department of Biology, Acadia University, Wolfville, N.S.,Canada BOP 1XO) **Photosynthetic response of geranium to elevated CO2 as affected by leaf age and time of CO2 exposure.** *Canadian Journal of Botany*, v. 69(11): p. 2482-2488 , 1991 (35 ref, Eng, Fre).

Geranium(Pelargonium hortorum) plants were grown from seed in chambers maintained at 350 or 1000 micro L.L. C02. Phtopsynthesis as affeted by leaf age and by leaf position was determined . Elevated CO2 enhanced photosynthesis to the greatest extent in middle aged leaves; very young leaves exhibited little enhancement, and net photosynthesis in the oldest leaves was depressed by elevated CO2. Temporary increases in net photosynthesis (relative to leaves denveloped at high CO2) resulted when young leaves grown at 350 micro L.L. 1CO2 were switched to 1000 micro L.L. 1CO2. Leaves switched later in development exhibited permanent enhancement. Middle-aged leaves exhibited a temporary depression followed by permanent enhancement. Leaves developed at high CO2 and switched to low CO2 did not exhibit any photosynthetic depression relative to plants grown continuously at low CO2. Similary, leaves developed at low CO2, switched to high CO2 for various lengths of time, and returned to low CO2 showed no photosynthetic depression. Leaves developed at low CO2 and switched to high CO2 exhibited increases in specific leaf weight and leaf thickness. The increase in leaf thickness was proportional to length of time spent at high CO2. High CO2 depressed the rate at which stomata developed but did not affect final stomatal density.

9206-3504 Kneer, R., Zenk, M.H.(Lehrstuhl fur Pharmazeutische Biologie, University Munchen, Karlstr. 29,8000 Munchen 2, Germany) **Phytochelatins protect plant enzymes from heavy metal poisoning.** *Phytochemistry*, v. 31(8): p. 2663-2667, 1992 (25 ref, Eng).

Challenging *Rauvolfia serpentina* suspension cells with sub-phytotoxic levels (100 micro M) Cadmium chloride containing 109Cd2+ and subsequent gel filtration of the carefully prepared cell-free extracts shows that the bulk (97 percent) of the radioactivity present as a phytochelatin complex. It is concluded that heavy metal ions entering cells at sub-lethal concentrations are totally complexed by phytochelatins. It was shown that a series of metal-sensitive plant enzymes such as alcohol dehydrogenase, glyceraldehyde-3-phosphate dehydrogenase, nitrate reductase, ribulose-1,5-diphosphate carboxylase and urease tolerate Cd2+ in the form of a phytochelatin complex from 10-to 1000-fold the amount as compared with the free metal ion. Free phytochelatin peptides reactivate metal-poisoned nitrate reductase in vitro up to 1000-fold better than chelators such as glutathione and citrate, showing the extraordinary sequestering potential of these peptides.

9206-3505 Krombholz, R., Mersinger, R., Kreis, W., Reinhard, E. (Lahrstuhl fur Pharmazeutische Biologie der Universitat Tubingen, Auf der Morgenstelle 8, D(W)-7400 Tubingen, Federal Republic of Germany) **Production of forskolin by axenic Coleus forskohlii roots cultivated in shake flasks and 20-1 glass jar bioreactors.** *Planta Medica*, v. 58(4): p. 328-333, 1992 (25 ref, Eng).

The growth behaviour of transformed and untransformed roots in batch culture in shake flasks and 20-1 glass jars has been reported. The influence of mechanical stress caused by cutting roots into small pieces in order to overcome difficulties in handling cultures of *C.forskolii*, consisting of entangled, mat-forming roots has been explored.

9206-3506 Kulkarni, A.S., Khotpal, R.R., Saha, S.K., Bhakare, H.A. (Department of Oil Technology, Laxminarayan Institute of Technology, Nagpur University, Nagpur 440 010, Maharashtra, India) **Fatty acid distribution in lipids of some plant seeds of Vidarbha region.** *Indian Journal of Pharmaceutical Sciences*, v. 54(3): p. 105-107, 1992 (15 ref, Eng).

Study by GLC of fatty acid distribution in total lipids, phospholipids and glycolipids of seeds of *Datura stramonium, Pithecellobium dulce* and *Saraca indica* plants found in Vidarbha region was found to be mainly palmitic, stearic, oleic and linoleic acids besides small quantities of myristic, linolenic and arachidic acids.

9206-3507 Kurosaki, F., Nagase, H., Nishi, A.(Faculty of Pharmaceutical Sciences, Toyama Medical and Pharmaceutical University, Sugitani, Toyama 930-01, Japan) **Stimulation of anthraquinone production in rhubarb tissue culture by an ethylene-generating reagent.** *Phytochemistry*, v. 31(8): p. 2735-2738, 1992 (21 ref, Eng).

The production of the anthraquinone derivatives chrysophanol and emodin in cultured rhubarb tissue was greatly stimulated by treatment of the cells with the ethylene-generating reagent 2-chloroethylphosphonic acid (2-CEPA). Addition of the calcium ionophore A23187 to the culture also enhanced the biosynthesis of these pigments. These results suggested that the stimulation of anthraquinone biosynthesis by rhubarb cells by ethylene is medicated by a transmembrance signalling system leading to calcium influx followed by activation of a calcium cascade in the cells.

9206-3508 Liwszyc, G.E., Vuori, E., Rasanen, I., Issakainen, J. (Department of Pathology, Botanical Museum, University of Helsinki Haartmaninkatu 3, SF-00290, Helsinki, Finland) **Daime- a ritual herbal potion.** *Journal of Ethnopharmacology*, v. 36(1): p. 91-92 , 1992 (8 ref, Eng).

A sample of Daime used in a religious ceremony in South America was cultured at room temperature and at 37 degree C in the incubator. At 37 degree C *Zygosaccharo mycesbailii* grew profusely and at room temperature *Penicillium* species was ovbserved. A monospecific bacterial growth was also noticed. Microscopy showed profuse, larage yeast cells with a minor population of smaller yeast cells fragments of mycelial mass, non-living granules and oil-like droplets. Spectroscopic analysis revealed the presence of three alcohols dimethyltriptamine, harmine and tetrahydroharmine and traces of harmaline.

9206-3509 Maldonado, S., Lott, J.N.A.*(Department of Biology, McMaster University, Hamilton, Ont., Canada L8S 4K1) **Protein bodies in Datura stramonium seeds: Structure and mineral nutrient composition.** *Canadian Journal of Botany*, v. 69(11): p. 2545-2554 , 1991 (44 ref, Eng, Fre).

The structure of protein bodies in the endosperm and embryo of *D.stramonium* was studied with a variety of light-and electron-microscopic techniques. Protein bodies had one to several globoid crystals and one or two protein crystalloids in the proteinaceous matrix. Although the embryo protein bodies rarely had more than two globoid crystals, the endosperm protein bodies had varying sizes and numbers of globoid crystals, even within the same cell. Energy-dispersive X-ray analysis of globoid crystals revealed the presence of P,K, and Mg in all cases. Traces of Fe, Mn, and Zn were also found in globoid crystals of protein bodies form certain cell types. The distribution patterns of these three elements were quite specific. Neutron-activation analysis of endosperm and embryo tissues was used to quantitatively measure the concentration of Ca, Cl, Cu, I,K,Mg, Mn, Na, and S. The results from structural studies and the element analysis studies are discussed.

9206-3510 Mamatha, H., Farooqi, A.A., Prasad, T.G.(University of Agricultural Sciences, GKVK Campus, Bangalore 560065, Karnataka, India) **Influence of source size on vegetative and reproductive growth of Gloriosa superba L..** *Crop Research*, v. 5(2): p. 260-265, 1992 (9 ref, Eng).

Based on the study conducted it was indicated that any reduction in source size (defoliation) reduced vegetative growth and productivity, whereas the increase in source size (growth regulators treatment) enhanced the vegetative growth on both levels. Productivity improved only with 1+10+0.1 ppm NAA+GA3+BA recording 15.19 percent increase (533.32 kg/ha) in dryseed yield over control (452.30 kg/ha). Resource enrichment with additional N failed to bring any improvement in *G.superba* seed yield. NSL, New Delhi.

9206-3511 Nagaraja, G.S., Muthappa, B.G. „Guruprasad, T.R. (Extension Education Unit, College of Fisheries, Manglore-2, Karnataka, India) **Effect of intermittent mist and growth regulators on propagation of Jasminum grandiflorum by different types of cuttings.** *Haryana Journal of Horticultural Sciences*, v. 20(3-4): p. 183-188, 1991 (10 ref, Eng).

IBA at 400 ppm proved most effective for the propagation of *J.grandiflorum* by hardwood, semi hardwood and softwood cuttings under intermittent mist with respect to rooting, number of roots and survival of rootings. The length of root was not dependent on number of roots formed. Hardwood cuttings had the highest regenerative capacity and it was lowest in semi hardwood cuttings. NSL, New Delhi.

9206-3512 Nirmal Babu, K., Samsudeen, K. , Ravindran, P.N. (National Research Centre for Spices P O Box 1701, Calicut 673 012, Kerala, India) **Direct regeneration of plantlets from immature inflorescence of ginger (Zingiber officinale Rosc.) by tissue culture.** *Journal of Spices and Aromatic Crops*, v. 1(1): p. 43-48 , 1992 (13 ref, Eng).

Immature inflorescences of ginger when cultured on MS revised medium supplemented with 10 mg 1-1 BA and 0.2 mg/1 2,4-D resulted in the conversion of floral buds into vegetative buds and these later developed into plantlets directly without intervening callus phase. About 38 percent of the buds produced multiple shoots ranging from 5-25. When individual flowers were cultured separatley on the same medium plantlets developed from the ovary in 45 percent of cases. These plantlets were made to develop good root system on MS medium with 1 mg 1/1 NAA. These rooted plantlets established easily in the soil. In some of the cultures the ovaries developed into fruits.

9206-3513 Oomah, B.D., Mazza, G., Kenaschuk, E.O.(Agriculture Canada Research Station, Morden, Manitoba ROG 1Jo, Canada) **Cyanogenic compounds in flaxseed.** *Journal of Agricultural and Food Chemistry*, v. 40(8): p. 1346-1348, 1992 (8 ref, Eng).

The seeds of 10 flax cultivars grown at Portage la Prairie, MB, in 1987, 1988, and 1989 and at Beaverlodge, AB and Indian Head, SK, in 1989 were analyzed for content of cyanogenic glucosides by HPLC. The main cyanogenic compound was the diglucoside linustatin at 213-352 mg/100g of seed, accounting for 54-76 percent of the total content of cyanogenic glucosides. The content of neolinustatin ranged from 91 to 203mg/100g of seed. Linamarin was pesent at low levels (mg/100g) in 8 of the 10 cultivars analyzed. The content of all three cyanogenic glucosides was dependent on cultivars, locatiion, and year of production, with cultivar being the most important factor.

9206-3514 Parikh, D., Deniel, M.(Phytochemistry Laboratory, Department of Botany, Faculty of Science, MS University of Baroda, Baroda 2, Gujarat, India) **Changes in the chemical content of Adhatoda and Trianthema due to fungal diseases.** *Indian Journal of Pharmaceutical Sciences*, v. 54(2): p. 73-75, 1992 (6 ref, Eng).

Vasicinone in *Adhatoda zeylanica* found lost and quercetin and ferulic acid in *Trianthema portulacastrum* were found newely synthesized due to fungal infection of *Collelotrichum gleosporoides* and *Fusarium oxysporum* respectively.

9206-3515 Ramachandran, K., Chandrasekharan Nair, P.N.(Department of Botany, University of Kerala, Kariavattom, Trivandrum 695 581, Kerala, India) **In vitro formation of roots and rhizomes from anther explants of ginger (Zingiber officinale Rosc.).** *Journal of Spices and Aromatic Crops*, v. 1(1): p. 72-74 , 1992 (5 ref, Eng).

Anther explants produced callus and profuse roots when cultured in a modified MS medium containing 2,4-D, and coconut milk and incubated in darkness.

9206-3516 Ruangrungsi, N., Prathanturarug, S. , Lange, G.L., Organ, M.G.(Department of Pharmacognosy, Faculty of Pharmaceutical Sciences, Chulalongkorn University, Bangkok 10330, Thailand) **An n-methyl aristolactam and an oxygenated cyclohexane derivative from Piper ribesioides.** *Phytochemistry*, v. 31(7): p. 2397-2400, 1992 (21 ref, Eng).

Investigation of the fruit and stems of *P.ribesioides* afforded eight known compounds in addition to the first natural N-methylaristolactam and a complex cyclohexenediol, known previously only as a synthetic product.

9206-3517 Savelkoul, F.H.M.G., Van Der Poel, A.F.B., Tamminga, S. (Department of Animal Nutrition, Haagsteeg 4, 6708 PM Wageningen, USA) **The presence and inactivation of trypsin inhibitors, tannins, lectins and amylase inhibitors in legume seeds during germination. A review.** *Plant Foods for Human Nutrition*, v. 42(1): p. 71-85 , 1992 (74 ref, Eng).

During the germination of legume seeds, enzymes become active in order to degrade starch, storage-protein and proteinaceous antinutritional factors. The degradation of storage-protein is necessary to make peptides and amino acids available in order to stimulate seed growth and early plant growth. Proteinaceous antinutritional factors such as amylase inhibitors. However, during germination, they degrade to a lower level by the action of several enzymes. The effect of germination on the content and activity of amylase inhibitors, lectins, tannins and trypsin inhibitors is discussed. Mode of action of enzymes and enzyme systems responsibility for the inactivation of antinutritional factors during germination of *Glycine max*,*Phaseolus vulgaris* and *Vicia faba* is reviewed.

9206-3518 Sen, J., Sharma, A.K., Sahu, N.P. , Mahato, S.B.(Centre of Advanced Study, Department of Botany, University of Calcutta, 35 Ballygunge Circular Road, Calcutta 700019, WB, India) **Production of forskolin in in vitro cultures of Coleus forskohlii.** *Planta Medica*, v. 58(4): p. 324-327, 1992 (17 ref, Eng).

Shoot tip culture, root organ suspension, and callus culture producing roots were established from shoot tip, root tip, and hypocotyl segments, respectively, on Murashige and Skoog's and White basal media with or without growth regulators. Forskolin was identified by TLC and HPLC in 60 days old shoot differentiating culture, 30 days old micropropagated plants, and root organ suspension but not in rhizogenic callus. Shoot differentiating culture established in the presence or absence of BAP revealed more or less similar amounts of forskolin as that of the micropropagated plants. Root organ suspension showed traces of forskolin prodcution.

9206-3519 Shobha, S.V., Krishnaswamy, P.R. , Ravindranath, B (Vittal Mallya Scientific Research Foundation, P.O.Box 406, K.R.Road, Bangalore 560004, Karnataka, India) **Phenolic lipid composition during development of cashew.** *Phytochemistry*, v. 31(7): p. 2295-2297, 1992 (9 ref, Eng).

Quantitative composition of the major phenolic lipids (anacardic acids, cardols and cardanols) of the apple, kernel and shell of the cashew plant have been determined at various stages of development by high-performance liquid chromatography. The results suggest the possibility of a fatty-acid type biogenesis of these phenolic lipids. Cardanols and cardols appear to be genuine metabolites and not artefacts formed from the corresponding carboxylic acids during isolation.

9206-3520 Suzuki, T., Ashihara, H., Waller, G.R.(Department of Applied Biology, Faculty of Textile Science, Kyoto Institute of Technology, Matsugasaki, Kyoto 606, Japan) **Purine and purine alkaloid metabolism in Camellia and Coffea plants.** *Phytochemistry*, v. 31(8): p. 2575-2584, 1992 (17 ref, Eng).

The metabolism of purine nucleotides and purine alkaloids (e.g.caffeine and theobromine) are reviewed in tea and coffee plants. Purine metabolism in these plants is similar to that in other plants, which do not contain caffeine; however, tea and coffee plants have purine nucleotides, including those produced directly by the pathway of purine biosynthesis de novo, as effective precursors of caffeine. The production and accumulation of the alkaloids are associated with the development stage of tissues (i.e. leaves, flowers, fruits and seeds) and with seasonal changes, especially in tea grown in temperate climates. The metabolism (especially biosynthesis) of purine alkaloids differs among *Camellia* spices. In *Coffea* plants and in cultured cells, the rate of caffeine synthesis and turnover (i.e.biodegradation and or biotransformation to xanthine or to methyluric acids) differs markedly among species. Ecological roles of the alkaloids have been reported, but their physiological significance in tea and coffee plants remains uncertain.

9206-3521 Tani, M., Fukui, H., Shimomura, M. , Tabata, M.(Faculty of Pharmaceutical Sciences, Kyoto University, Sakyoku, Kyoto 606, Japan) **Structure of endogenous oligogalacturonides inducing shikonin biosynthesis in Lithospermum cell cultures.** *Phytochemistry*, v. 31(8): p. 2719-2723, 1992 (31 ref, Eng).

Endogenous oligogalacturonides capable of inducing the biosynthesis of naphthoquinone pigments, shikonin derivatives, in cell cultures of *L.erythrorhizon* have been isolated and chemically elucidated. Analyses of the chemical composition and linkage of these sugars revealed that the active principle is an alpha-1,4-linked linear oligogalacturonide consisting of an average of 18 galacturonic acid units. Bioassays using a series of oligogalacturonides with various degrees of polymerization (2-15) indicated that the minimum degree of polymerization required for the induction of shikonin biosynthesis is 12.

9206-3522 Varma, P.N., Vikramaditya, Sarkar, M.(Homoeopathic Pharmacopoeia Laboratory, Ghaziabad 201002, UP, India) **A preliminary report on the in vitro culture of Vitex agnus-castus.** *Journal of Economic and Taxonomic Botany*, v. 15(3): p. 687-694, 1991 (11 ref, Eng).

V.agnus-castus yields an important homoeopathic medicine used for various sexual debilities. The best growth of callus was achieved when the basal medium was supplemented with 0.5 mg/1 Kinetin +1.0 mg/1 NAA. On a modified Murashige & Skoog's medium auxins in low doses produced roots only, high doses of cytokinins produced shoot buds only, a balance of 0.1 mg/1 BAP and 0.5 mg/1 NAA produced highest number of shoot buds. Adenine sulphate (10 mg/1) showed synergistic action in shoot bud production and addition of 0.5 mg/1 IAA to this balance produced roots to the shoot bud producing inocula.

9206-3523 Xia, Z.Q., Zenk, M.H.(Lehrstuhl fur Pharmazeutische Biologie der Universitat Munchen, Karlstrasse 29, D-8000 Munchen 2, Germany) **Biosynthesis of indigo precursors in higher plants.** *Phytochemistry*, v. 31(8): p. 2695-2697, 1992 (11 ref, Eng).

Contradictory results in the literature concerning the role of L-tryptophan in the biosynthesis of the indigo precursors, indican and isatan B, in four higher plants viz., *Baphicacanthus cusia,Calanthe veratrifolia,Isatis tinctoria*and *Polygonum tinctorium* belonging to four plant familes have been resolved. Feeding experiments with the labelled precursors unequivocally showed by 13C NMR and mass spectroscopy, that indole and not L-tryptophan is the biosynthetic precursor for the indoxyl derivatives found in plants.

Pharmacognosy

9206-3524 Ali, A., Sharma, S.N.(Department of Pharmaceutics, Faculty of Pharmacy, Jamia Hamdard, (Hamdard University), New Delhi 110062, India) **Stabilization of nifedipine preparations with curcumin.** *Indian Journal of Pharmaceutical Sciences*, v. 54(3): p. 101-105, 1992 (11 ref, Eng).

Prevention of the degradation of nifedipine , a dihydropyridine derivative with potent coronary and peripheral arterial vasodilator properties, used in the treatment of angina pectoris and hypertension and its preparation due to UV light by curcumin is reported,. Increasing concentration of curcumin was found to decrease the rate of degradation of nifedipine preparations. Higher rate of degradation was detected in liquid preparation as compared with solid preparations of nifedipine.

9206-3525 Gopalakrishnan, S., Johnson Solomon, M.(Department of Chemistry, Manonmaniam Sundaranar University, Schaffter Hall, Palayamkottai 627 002, Tamil Nadu, India) **Comparative pharmacognostic studies on the leaves of Eclipta alba and Wedelia calendulacea.** *International Journal of Pharmacognosy*, v. 30(1): p. 33-38, 1992 (11 ref, Eng).

Pharmacognostic studies on the leaves of *E.alba* (Bring raj) and *W.calendulacea*(Pitha bringi) have been performed. Microscopic characteristics of the leaves and stems have been compared. Fluorescence characteristics of the leaf powders and the extracts of the leaves in various solvents have been compared along with quantitative values, ash values and extractive values. Phytochemical analysis of the extracts of the leaf powders in various solvents have been performed.

9206-3526 Khan, H.A., Harsh, L.N.(Central Arid Zone Research Institute, Jodhpur, Rajasthan, India) **Physico-chemical characteristics of ethephon induced gum from Acacia senegal.** *Indian Drugs*, v. 29(11): p. 507-508, 1992 (4 ref, Eng).

Ethephon induced gum obtained from *A.senegal* was found to be at par as per the specifications laid down in pharmacopoeia of India gum.

9206-3527 Qasim, M.A., Ahmad, S., Kamil, M.(Drug Standardisation Research Unit, CCRUM, Department of Chemistry, Aligarh Muslim University, Aligarh 202 002, UP, India) **Standardization of Majoon-e-Fanjnosh.** *Hamdard Medicus*, v. 35(2): p. 108-111, 1992 (4 ref, Eng).

Thirteen ingredients of Majoon-e-Fanjosh with their botanical names, family and quantity along with the analytical characteristic of the drug have been reported.

9206-3528 Shah, N.C., Singh, S.C.(Central Institute of Medicinal and Aromatic Plants, Lucknow 226 016, UP, India) **Ipomoea muricata(L.) Jacq.-a good substitute of Kaladana.** *Journal of Economic and Taxonomic Botany*, v. 16(1): p. 245-246, 1992 (Eng).

Ipomoea muricata has been suggested as substitute of *I. nil* syn. *I.hederacea* due to presence of lysergol, its therapeutic activity and availability.

9206-3529 Shome, U., Mehrotra, S., Sharma, H.P.(Pharmacognosy Section, National Botanical Research Institute, Lucknow 226 001, UP, India) **Comparative pharmacognosy of two Althaea spp. and 'Gulkhairo' samples.** *International Journal of Pharmacognosy*, v. 30(1): p. 47-55, 1992 (7 ref, Eng).

'Gulkhairo', is used as an expectorant for cases of bronchial catarrh and bronchitis as an important drug in Unani medicine. It is attributable to either *Althaea officinalis* or *A.rosea* by various authors. In view of this confusion a comparative study of *Althaea officinalis, a.rosea* flowers and three market samples was carried out to determine the origin of the trade samples. It was concluded that the trade samples studied consist of a mixture of *A.rosea* and *A.officinalis* in varying proportions.

Clinical Studies

9206-3530 . Natural product agents in development by the united states national cancer institute(NCI). *Journal of Natural Products*, v. 55(7): p. 1018-1019 , 1992 (8 ref, Eng).

Over the past 30 years, NCI has been involved in the development of natural product agents for the treatment of various forms of cancer. Agents include plant-derived drugs, such as vinblastine and vincristine, etoposide, and taxol, as well as microbially derived drugs, such as adrimaycin, bleomycin, and mitomycin C. NCI has a major interest in natural products as sources of potential new drugs for the treatment of cancer and AIDS. Natural product agents of interest to NCI have been classified according to their approval status in the decision network(DN) process.

9206-3531 Atique, A., Iqbal, M.(Department of Botany, KLDAV College, Roorkee 247 667, UP, India) **Traditional single drug administration for the psychosomatic dermal diseases.** *Hamdard Medicus*, v. 35(2): p. 76-81, 1992 (10 ref, Eng).

Botanical desoriphion of Karanj (*Pongamia pinnata* syn *P.glabra*), drug preparation and its therapeutic use for the treatment of psoriasis have been discussed. Efficacy of the treatment on a few patients suffering from psoriasis and other psychosomatic skin disorders has been reported.

9206-3532 Balacs, T. **Safety in pregnancy.** *International Journal of Aromatherapy*, v. 4(1): p. 12-15 , 1992 (38 ref, Eng).

This report provides guidelines in the use of oils during pregnancy. A number of oils having abortifacient, emmenagogue,stimulant and carcinogenic activities have been discussed. Great caution should be exercised in the use of these oils. It is advised that pennyroyal be avoided at all costs during pregnancy.

9206-3533 Bassett, I.B., Pannowitz, D.L. , Barneston, R.C. (Department of Dermatology, Royal Prince Alfred Hospital, Camperdown, NSW 2050, Australia) **Tea tree gel controls acne.** *International Journal of Aromatherapy*, v. 3(1): p. 14-16 , 1991 (12 rerf, Eng).

Tea tree oil (essential oil from *Melalauca alternifolia* as a 5 percent water gel was applied for acne treatment to 124 patients and the results were compared with 5 percent benzoyl peroxide solution. The results indicate that both tea tree gel and benzoyl peroxide had a significant effect in an eborating acne, however the former showed lesser side effects.

9206-3534 Burns, E., Fischer-Rizzi, S. , Stadelmann, I., Culter, K.(John radcliffe Maternity Hospital, Oxford, UK) **Dedicated to better birth.** *International Journal of Aromatherapy*, v. 4(1): p. 9-11 , 1992 (Eng).

Based on a pilot study from England, Germany, Switzerland and Australia a data base has been created on the use of aromatherapy during labour. Some of the oils reommended for different purposes are lavender, juniper, peppermint, cypress, meadowsweet, lemon, jojoba, rosewood, carrot seed, rose, hazel, clary sage, St John's wort and wheat gram oil.

9206-3535 Chauhan, C.K., Nanivadekar, S.A. , Billimoria, F.R. (Department of Pharmacology, LTM Medical College & Hospital, Sion, Bombay 400022, Maharashtra, India) **Effect of a herbal hepatoprotective product on drug metabolism in patients of cirrhosis and hepatic enzyme function in experimental liver damage.** *Indian Journal of Pharmacology*, v. 24(2): p. 107-110 , 1992 (14 ref, Eng).

A herbal drug containing 6 plants viz., *Tephrosia purpurea*, *Eclipta alba*, *Phyllanthus niruri*, *Andrographis paniculata*, *Terminalia chebula* and *Ocimum sanctum* was evaluated in patients of cirrhosis (treated for three weeks). The extent of improvement by the drug was determined by estimating serum antipyrine half life. This drug reduced antipyrine half-life significantly (P 0.001) from 29.3+-1.1 h to 17.9+-0.9 h after treatment. In experimental CCl_4 induced acute and chronic liver damage in rats, pretreatment with this product was effective in inhibiting triglyceride accumulation in hepatic cells and in protecting liver against increased hydroxyproline content. NSL, New Delhi.

9206-3536 Chun, J., Dai, R.H.(Huashan Hospital, Shanghai Medical University, Shanghai 200040; People's Republic of China) **Effect of Astragalus membranaceus on erythrocyte sodium content and sodium transport in the coronary heart disease.** *Chinese Journal of Integrated Traditional and Western Medicine*, v. 11(11): p. 651-653, 1991 (6 ref, Chi, Eng).

Forty-five cases of coronary heart disease were treated with *A.membranaceus* intravenous 24 g/d infused into 5 percent glucose 250 ml. After a curable stage of 14 days the erythrocyte sodium content was markedly decreased and the sodium pump activity was significantly increased, but no significant difference in membrane permeability to sodium was observed. There was no difference in erythrocyte sodium content and sodium transport in the control group.

9206-3537 Dong, J.C., Shen, Z.Y.(Huashan Hospital, Shanghai Medical University, Shanghai 200040, People's Republic of China) **Investigation of treating 106 COPD cases with Shou Er Kang pill and high dose beclomethansone dipropionate aerosol.** *Chinese Journal of Integrated Traditional and Western Medicine*, v. 11(10): p. 585-588; 1991 (9 ref, Chi, Eng).

Out of 106 chronic obstructive pulmonary disease (COPD), 53 were treated with Shou Er Kang (SEK) pill (kidney-reinforcing regimen) and high dose beclomethasone dipropionate inhaler, and 53 with high dose beclomethasone dipropionate aerosol (control group) alone. Total effective rate was 100 percent and 96.9 percent in asthmatic patients in both of the groups. However, in case of asthamtic bronchitis patients the total effective rates were 85.7 percent in SEK group and 52.4 percent in the control group. The adrenal cortex reserve power and secretive ability of the SEK group improved markedly under high dose exogenous steroids. The relapse rate in SEK group was 26.9 percent but 40 percent in the control group.

9206-3538 Esteve, M.M., Kriesten, R.M.(Rofersam, S.A.Ctra.Naciional 152, Km. 23,650, 08150-Pavets del Valles (Barcelona) Spain) **Study of active complex for skin aging prevention.** *Parfumerie und Kosmetik*, v. 72(12): p. 820-829, 1991 (33 ref, Eng).

Clinical evaluation of an antiwrinkle active complex containing *Silybum marianum* and silymarin has shown that the cream containing this complex is effective in controlling the aging of skin in 45 women aged 40-70 years.

9206-3539 Ge, X.L. et al.(Department of Gynaecology, Second Affliated Hospital, Hebei Medical College, Shijiazhuang 050000, People's Republic of China) **Treatment of secondary amenorrhea and oligohypomenarrhea with combined traditional Chinese and Western medicine.** *Chinese Journal of Integrated Traditional and Western Medicine*, v. 11(11): p. 661-663, 1991 (9 ref, Chi, Eng).

Treatment of 149 cases (1087 cycles) with secondary amenorrhea and oligohypomenorrhea, including 42 cases who were treated by cycle treatment with traditional Chinese medicine (TCM) and clomiphen in comparison with clomiphen in 67 cases and/or TCM in 40 cases at the same time is reported. The results showed that ovulatory rate of secondary amenorrhea, calculated according to menstrual cycles, was significantly higher in the group of TCM and clomiphen than that of clomiphen or TCM. The efficacy of clomiphen was better than that of TCM. The ovulatory rate of oligohypomenorrhea was significantly increased by using TCM and clomiphen in contrast to only Western medicine.

9206-3540 Guenier, J.. **Essential obstetrics.** *International Journal of Aromatherapy*, v. 4(1): p. 6-8 , 1992 (Eng).

A working midwife gives practical suggestions on essential oils for anti and post natal care and to soothe during labour. Use of various oils for the respective diseases, action of the oils, mode of administration, have been enumerated. The oils in common use are lavender, ginger, geranium, tea tree, lemon, coriander, lemongrass, frankincense, marjoram and encalyplus.

9206-3541 Hardy, M.(Old Manor Hospital, Salisbury, Wiltshire, UK) **Sweet scented dreams: Vaporised lavender oil as a nocturanal sedative for elderly patients with sleeping difficulties.** *International Journal of Aromatherapy*, v. 3(1): p. 12-13, 1991 (Eng).

Lavender oil *(Lavandula* sp) known for its calming and soporific effects, has been used in London hospitats to aid in night sedation, replacing medication. Four male elderly residents were assessed for 24 hr sleep pattern over 6 weeks, using a vortex air freshner. The results indicated that a natural and refreshing nights sleep can be obtained by the elderly, without any side effects and this therapy is cost effective.

9206-3542 Iyer, U.M., Mehta, N.C., Mani, I , Mani, U.V.(Department of Foods and Nutrition, Department of Medicine, M.S. University of Baroda, Baroda 390002, India) **Studies on the effect of dry Sundakai (Solanum torvum) powder supplementation on lipid profile, glycated proteins and amino acids in non-insulin dependent diabetic patients.** *Plant Foods for Human Nutrition*, v. 42(2): p. 175-182 , 1992 (12 ref, Eng).

The effect of dry Sundakai powder supplementation (7g providing 1.23g of crude fibre) on glycemic control, lipidemic control, total amino acids and uronic acid was studied on 30 non-insulin dependent diabetes mellitus patients. All the patients were on hypoglycemic drugs. The above parameters were monitored at day 1,15 and 30 days. After one month of fibre supplementation, on significant changes were observed with respect to glucose, lipid profile, glycated proteins, total amino acids and uronic acid levels in these subjects inspite of Sundakai being rich in fibre. This indicates that the quality of fibre may be more important than quantity of the fibre in bringing out the favourable response.

9206-3543 Karnick, C.R.(Clinical and Experimental Research Division(Ayurvedic) Wockhardt Ltd., Aurangabad, Maharashtra, India) **Clinical evaluation of Cyperus rotundus Linn (Motha) on obesity: A randomised double blind placebo controlled trials on Indian patients.** *Indian Medicine*, v. 4(2): p. 7-10, 1992 (10 ref, Eng).

Thirty obese persons of different ages were treated with *C.rotundus*(Motha) tuber powder (1 capsule of 450 gm) for 90 days. A group of ten patients was observed as a placebo group. Various parameters of loss of weight, body girth (waist) both at region of stomach and hips flabbiness of body was taken into account. Percentage decrease of serum cholesterol and triglyceride variation was observed. Motha helped in the reduction of weight of obese patients.

9206-3544 Kulkarni, R.R., Patki, P.S., Jog, V.P., Gandage, Patwardhan, B.(Byranyee Jeejeebhoy Medical College & Sasson General Hospital and Interdisciplinary School of Health Sciences, University of Poona, Pune, Maharashtra, India) **Efficacy of an Ayurvedic formulation in rheumatoid arthritis: A double blind placebo controlled, cross-over study.** *Indian Journal of Pharmacology*, v. 24(2): p. 98-101 , 1992 (35 ref, Eng).

The clinical efficacy of an Ayurvedic drug containing *Withania somnifera*, *Boswellia serrata*, *Curcuma longa* and zinc was evaluated in placebo control and 20 patients of rheumatoid arthritis. Treatment with drug for 3 months produced significantly greater relief of pain, decreased morning stiffness, decrease in Ritche articular index and joint score. A significant drop in erythrocyte sedimentation rate was observed in the drug treated patients (P less then 0.01). Nine out of 20 patients showed seroconversion at the end of three months treatment with indigenous drug. Radiological assessment however did not show any significant changes in both the group of patients. NSL, New Delhi.

9206-3545 Lozoya, X., Navarro, V., Garcia, M. , Zurita, M.(Unidad de Investigcion on Medicina Tradicional y Desarrollo de Medicamentos, IMSS Argentina 1, Xochitepec. Mor. CP 62790, Mexico) **Solanum chrysotrichum(Sehedl.) a plant used in Mexico for the treatment of skin mycosis.** *Journal of Ethnopharmacology*, v. 36(2): p. 127-132 , 1992 (30 ref, Eng).

Clinical trials were conducted using a cream containing 5 percent leaf extract of *S.chrysotrichum*. Results showed that 45 percent of the patients were completely cured after 4 weeks of topical application. The rest of the cases improved notably in comparison with control group of patients using the miconazol treatment. The same plant extract inhibited the growth in vitro of the dermatophytes at MICs under 15 mg/ml.

9206-3546 Pathak, B., Dwivedi, K.K., Shukla, K.P.(Department of Prasuti Tantra Institute of Medical Sciences, Banaras Hindu University, Varanasi-221005, India) **Clincial evaluation of snehana, Swedana and an Ayurvedic compound drug in Sandhivata vis-a vis osteoarthritis.** *Journal of Research and Education in Indian Medicine*, v. 11(2): p. 27-34, 1992 (15 ref, Eng).

Scientific study was planned to evaluate the efficacy of Snehana and Swedana and a compound Ayurvedic drug (Ashwagandha guggulu Capsule) in the treatment of Sandhivata vis-a-vis osteoarthritis. 40 classical patients of Sandhivata were registered. 30 patients were selected for the clinical trial after taking proper consent. 3 groups of 10 patients each were formed (Group I Snehana Swedana, Group II A.G. Capsule, Group III Snehana and Swedana + A.G. Capsule). Diagnostic criteria was based on signs, symptoms and positive findings according to Ayurveda and Modern system of medicine. Patients were followed up after 15 days, 60 days and 90 days of the treatment. Assessment of the result was based on different parameters and symptomatic relief was examined with the help of a four point rating scale according to patient's statement. The overall result shows that complete symptomatic relief was only observed in few patients of III group. Combination therapy was more effective.

9206-3547 Penoel, D.. **Sinusitis & bronchitis.** *International Journal of Aromatherapy*, v. 4(1): p. 26-27 , 1992 (Eng).

A clinical case from France has been reported where a pregnant woman was successfully treated for bronchial and sinusitis infection by the use of various essential oils (oral, spray, rubs) after the failure of antibiotics. It is found that cineole rich essential oils show a strong activity against gram-bacillus and gram-coccus. However, certain essential oils which are toxic during pregnancy should be avoided.

9206-3548 Shanker, A.(R A Hospital & Research Centre, Warisaliganj, Nawada 805130, Bihar, India) **Herbosol in prevention of post measles complications.** *Indian Medical Gazette*, v. 126(5): p. 149-151, 1992 (5 ref, Eng).

Herbosol was evaluated in two groups of patients 50 each (study group A and control-B). Group A patients were given Herbosol in dosage of 5 ml morning and evening with milk/water for 10 days in addition to conservative management as in control group. No mortality with marked gain in body weight and haemoglobin rise were observed as compared to control. In control group 5 percent mortality and morbidity in terms of loss of body weight and haemoglobin were observed. NSL, New Delhi.

9206-3549 Shanker, A.(R.A. Hospital & Research Center, Warisaliganj, Nawada 805 130, Bihar, India) **Kofol in management of pertusis in rural paediatric practice.** *Current Medical Practice*, v. 36(5): p. 127-130, 1992 (Eng).

Kofol is a herbal remedy with an appropriate antimicrobial agent in adequate dosage showed excellent clinical cure in 93 percent patients of parsistant pertusis with marked appetite improvement and weight gain in 90 percent and 95 percent cases respectively. No patients had any appetite deterioration and untoward effect either during therapy or in post therapy follow up. NSL, New Delhi.

9206-3550 Siddiqui, M.S.H., Ashraf, S.M. , Siddiqui, M.M.H. (Post-Graduate Research Laboratory, Department of Moalijat A.K.Tibbiya College, Aligarh Muslim University, Aligarh 202002, India) **Impotence: Unani concept and its management.** *Journal of Research and Education in Indian Medicine*, v. 11(2): p. 13-18, 1992 (17 ref, Eng).

Single and composite drugs used in the Unani system of medicine for the treatment of impotence, have been enumerated.

9206-3551 Singh, R.P., Shukla, K.P., Pandey, B.L., Singh, R.G., Usha, Singh, R.H.(Department of Nephrology, Institute of Medical Sciences, Banaras Hindu University, Varanasi 221 005, UP, India) **Recent approach in clinical and experimental evaluation of diuretic action of punarnava (Boerhaavia diffusa) with special reference to nephrotic syndrome.** *Journal of Research and Education in Indian Medicine*, v. 11(1): p. 29-36, 1992 (21 ref, Eng).

Results are reported on the clinical, experimental and immunological studies on Punarnava (*B.diffusa*). The observations reveal equivalent diuretic effect to Furosemide. Punarnava increases the serum protein level and reduces urinary protein excretion in patients of Nephrotic syndrome. Increase was noted, also in the level of immunoglobulins and lower immunecomplex after one month of medication in patients of Nephrotic syndrome. Clinically Punarnava proved to be useful and safe drug in patients of Nephrotic syndrome.

9206-3552 Tripathi, P.C., Shaw, B.P., Mishra, R.K., Mishra, P.K. (Institute of P G Education and Research in Ayurveda, 294/3/1, Acharya Prafulla Chandra Road, Calcutta 700 009, WB, India) **The role of amalaki in the management of amlapitta.** *Indian Medicine*, v. 4(2): p. 11, 1992 (9 ref, Eng).

Decoction of dried Amalaki (*Emblica officinalis*) fruits (5 gm boiled in 80 ml of water till 20 ml left) was given twice daily after the principal meals to 14 patients of amalpitta (acidity). The response to drug was assessed in terms of subjective and objective improvements and by measuring the concentration of total and free acids. The mean values of acids were reduced significantly after 30 days of treatment.

9206-3553 Zhang, F.C., Zheng, L.J.(The Third Teaching Hospital of Bethune University of Medical Sciences, Changchun 130021, People's Republic of China) **Effect of different administration of Salvia miltiorrhiza and heparin on AT III Ag, AT III: A and alpha2-M in patients with corpulmonal.** *Chinese Journal of Integrated Traditional and Western Medicine*, v. 11(10): p. 589-591, 1991 (9 ref, Chi, Eng).

S.miltiorrhiza (SM) exhibited AT III-like activity in 102 patients. After treatment with SM, the level of AT III:A was significantly higher than that with heparin vapour inhalation, heparin intravenous drip and regular treatment, heparin may enhance the AT III-like activity of SM. The treatment combining SM intravenous drip with heparin vapour inhalation is an efficient therapy of anticoagulation on the patients with cor pulmonal. The level of alpha2-M in each group did not reveal significant change.

Pharmacology & Toxicology

9206-3554 Akhtar, M.S., Akhtar, A.H., Khan, M.A.(Department of Physiology and Pharmacology, University of Agricultrue, Faisalabad, Pakistan) **Antiulcerogenic effects of Ocimum basilicum extracts, volatile oils and flavonoid glycosides in albino rats.** *International Journal of Pharmacognosy*, v. 30(2): p. 97-104, 1992 (15 ref, Eng).

Antiulcerogenic effects of extracts, volatile oils and flavonoid glycosides of leaves of *O.basilicum* was studied in normal and induced ulcerated rats. The aqueous, methanol and water-methanol extracts and flavonoid glycosides reduced the ulcer index, inhibited gastric acid and pepsin secretions and enhanced hexosamines in aspirin treated rats. Volatile oils of the plant were ineffective against stress-induced ulcers. It appears that antiulcerogenic activity of *O.basilicum* is extractable into both water and methanol and its active principles may include flavonoid glycosides.

9206-3555 Akojie, F.O.B., Fung, L.W.M.(Department of Biochemistry, University of Benin P.M.B. 1154, Benin City, Nigeria) **Antisickling activity of hydroxybenzoic acids in Cajanus cajan.** *Planta Medica*, v. 58(4): p. 317-320, 1992 (12 ref, Eng).

The amounts of phenylalanine and hydroxybenzoic acid in a *Cajanus cajan* methanolic extract were estimated. Results showed that the amount of phenylalanine and hydroxybenzoic acid per gram weight of bean was 4.92mg+- 0.13 mg and 21.0mg+- 3.0 micro g, respectively. Sickling inhibition was observed to be efficient with the extract which contains a mixture of phenylalanine (0.69 mg/ml) and p-hydroxybenzoic acid (10.5 micro/g ml), equivalent to those found in bean extract. The additive antisickling efect of both compounds can be therapeutically exploited for the treatment of sickle cell anemia.

9206-3556 Al-Harbi, M.M., Al-Said, M.S., Al- Azizi, M.M. (Departments of Pharmacology and Pharmacognosy, College of Pharmacy, king Saud University, Riyadh 11451, P O Box 2457, Saudi Arabia) **Preliminary phytochemical and pharmacological studies on Anisotes trisulcus.** *International Journal of Pharmacognosy*, v. 30(2): p. 87-92, 1992 (17 ref, Eng).

Preliminary phytochemical screening of *A.trisulcus* revealed that alkaloids are a major constituent. a mixture of the total alkaloids produces an apparent increase in respiration, piloerection, tremors, convulsions and death, at intraperitoneal doses of 100 and 200 mg/kg in mice. In contrast, oral administration of doses of 200 and 400 mg/kg produces weak tremors without convulsions. Furthermore, the alkaloidal mixture was shown to possess a local anesthetic effect similar to that of procaine hydrochloride. The total alkaloid mixture (20 ug/ml) was also found to reduce the contraction induced by acetylcholine, histamine and barium chloride in isolated guinea pig ileum.

9206-3557 Ali, M.B., Mohamed, A.H., Bashir, A.K., Salih, A.M. (Medicinal and Aromatic Herbs Research Institute, National Council for Research, P O Box 2404, Khartoum, Sudan) **Pharmacological investigation of Haplophyllum tuberculatum.** *International Journal of Pharmacognosy*, v. 30(1): p. 39-45, 1992 (15 ref, Eng).

The effect of a 20 percent (w/v) aqueous extract of *H.tuberculatum* aerial parts was studied on isolated rabbit jejunum, guinea-pig ileum, rat uterus, rat stomach strip and rat colon. The extract (1.6 ml/25 ml-bath ~ 76.6mg of starting material) produced a biphasic effect on both jejunum and ileum: an initial reversible stimulation, followed by sustained inhibition. The stimulant effect was blocked by atropine and the inhibition was resistant to a number of standard receptor blockers. The extract also stimulated uterus, fundus strip and colon. Cyproheptadine blocked effects on uterus and fundus strip, while indomethacin largely reduced the activity on the colon. Inorganic content did not account for the extract activity on isolated tissues. The plant may induce a direct intestinal muscle relaxation which may account for its popular spasmolytic use.

9206-3558 Ammar, N., Al-Okbi, S., Wassel, G. , Shabana, M., Shabana, M(Pharmaceutical Sciences Department, National Research Centre, Dokki, Cairo, Egypt) **Hypoglycaemic activity of Xanthium pungens, Compositae.** *Journal of Research and Education in Indian Medicine*, v. 11(2): p. 19-23, 1992 (19 ref, Eng).

The wild herb of *X.pungens*, collected from the Nile delta of Egypt was studied for its hypoglycaemic effect on rats. Bio-assay directed fractionation of the hypoglycaemic extracts had led to the isolation of a polysaccharide as one of the active principles. The structure was elucidated by PC and GLC.

9206-3559 Aqel, M., Al-Khalil, S., Afifi, F.(Faculty of Medicine, and Faculty of Pharmacy, University of Jordan, Amman, Jordan) **The relaxing effect of Ferula ovina extract on uterine smooth muscle of rat and guinea pig.** *International Journal of Pharmacognosy*, v. 30(1): p. 76-80, 1992 (12 ref, Eng).

The effects of an aqueous extract of *F.ovina* on uterine smooth muscle of rat and guinea pig were tested in vitro using isolated uterine horns. The aqueous extract of *f.ovina* inhibited the spontaneous movement of the rat and guinea pig uterine smooth muscle. Also, the aqueous extract inhibited the contractions of rat and guinea pig uterine smooth muscle induced by oxytocin stimulation. This inhibition was dose-dependent and reversible. These data suggest that this plant extract has an antioxytocic effect.

9206-3560 Balacs, T.. **Pepermint- pharmacology.** *International Journal of Aromatherapy*, v. 4(1): p. 22-25 , 1992 (59 ref, Eng).

Peppermint *Mentha piperita* is the only essential oil licensed as a medicine in UK. Its main constituent is l-menthol (36 percent). Physiological and biochemical researches on peppermint, its medicinal uses, toxicity etc have been reviewed.

9206-3561 Breschi, M.C., Martinotti, E. , Catalano, S., Flamini, G., Morelli, I. , Pagni, A.M.*(Dipartimento di Science Botaniche, Universita di Pisa, Vis Bonanno 33,56126 Pisa, Italy*) **Vasoconstrictor activity of 8-0-acetylharpagide from Ajuga reptans.** *Journal of Natural Products*, v. 55(8): p. 1145-1148 , 1992 (24 ref, Eng).

The traditional therapeutic indications for the use of *A.reptans* have been investigated. The water soluble part of a crude and partially purified methanol extract and two isolated iridoids (8-O-acetylharpagide and harpagide), were tested for a biological activity on isolated smooth muscle preparations from guinea pig. Antihemorrhagic activity of *A.repens* due to a vasocontriction mediated by involvement of vasal alpha adrenoceptors has been postulated.

9206-3562 Chander, R., Kapoor, N.K., Dhawan, B.N.(Biochemistry Division and ICMR Centre for Advanced Pharmacological Research on Traditional Remedies, Central Drug Research Institute, Lucknow 226001, UP, India) **Effect of picroliv on glutathione me-**

tabolism in liver and brain of Mastomys natalensis infected with Plasmodium berghei. *Indian Journal of Experimental Biology*, v. 30(8): p. 711-714, 1992 (22 ref, Eng).

Administration of Picroliv, the active principle from *Picrorhiza kurrooa*, at a dose of 6 mg/kg, po for two weeks showed significant protection against changes in liver and brain glutathione metabolism of *Plasmodium berghei* infected *Mastomys natalensis*. The depletion of reduced glutathione level and inhibition of glutathione-S-transferase; glutathione reductase and glutathione peroxidase activities due to *P.berghei* infection were markedly recovered by Picroliv. The increased levels of lipid peroxidation products in damaged tissues were also reduced along with the recovery of glutathione metabolism.

9206-3563 Chattopadhyay, R.R., Sarkar, S.K., Ganguly, S., Banerjee, R.N., Basu, T.K., Mukherjee, A.(Biometry Research Unit, Indian Statistical Institute, 203, Barrackpore Trunk Road, Calcutta, WB, India) **Hepatoprotective activity of Azadirachta indica leaves on paracetamol induced hepatic damage in rats.** *Indian Journal of Experimental Biology*, v. 30(8): p. 738-740, 1992 (13 ref, Eng).

Effect of *A.indica* leaf extract on serum enzyme levels (glutamate oxalocetate transaminase, glutamate pyruvate transaminase, acid phosphatase and alkaline phosphatase) elevated by paracetamol in rats was studied with a view to observe any possible hepatoprotective effect of this plant. Serum enzyme levels were much elevated in paracetamol induced animals than in those receiving a combination of paracetamol and leaf extract. It is stipulated that the extract treated group was protected from hepatic cell damage caused by paracetamol induction. The findings were further confirmed by histopathological study of liver.

9206-3564 Chauhan, N.S., Kaith, B.S., Mann, S.K.(College of Forestry, Dr. Y.S. Parmar University of Horticulture and Forestry, Solan 173 230, H.P. India) **Anti-inflammatory activity of Rheum australe roots.** *International Journal of Pharmacognosy*, v. 30(2): p. 93-96, 1992 (13 ref, Eng).

Extracts of the roots of *R.australe* were found to inhibit edema after carrageenin injection in the left hind paw of rats. The degree of inhibition was found to increase as a function of time after administration of carrageenin, and reached a maximum at 5 h. Ibuprofen (50 mg/kg) was used as reference and induced 59.6 percent inhibition, which was similar to the activity shown by the pet. ether and methanol extracts (500 mg/kg).

9206-3565 Chen, C.H., Lin, J.Y.*, Lin, C.N., Hsu, S.Y.(Institute of Biochemistry, College of Medicine, National Taiwan University, No. 1, Section 1, Jen-ai-Rd, Taipei, Taiwan, Republic of China) **Inhibition of angiotension-I-converting enzyme by tetrahydroxyxanthones isolated from Tripterospermum lanceolatum.** *Journal of Natural Products*, v. 55(5): p. 691-695, 1992 (14 ref, Eng).

Five tetrahydroxyxanthones isolated from *T.lanceolatum* inhibited angiotension-I-converting-enzyme activity in a dose-dependent manner. The mode of inhibition of the tetrahydroxyxanthones (THXs) was found to be competitive inhibition. When the tetrahydroxy groups of the THXs were blocked with acetyl groups, the angiotension-I-converting-enzyme inhibitory activity was abolished, suggesting that the tetrahydroxy groups are indispensible for the inhibitory activity.

9206-3566 Cherian, S.Y., Vinod Kumar, R., Augusti, K.T., Kidwai, J.R.(Department of Biochemistry, University of Kerala Thiruvananthapuram 695, 581, Kerala, India) **Antidiabetic effect of aglycoside of pelargonidin isolated from the bark of Ficus bengalensis Linn..** *Indian Journal of Biochemistry and Biophysics*, v. 29(4): p. 380-382, 1992 (20 ref, Eng).

Antidiabetic effect of dimethoxy derivative of pelargonidin 3-O-alpha-L-rhamnoside (250 mg/kg, single dose and 100 mg/kg/day long term study) isolated from the bark of *Ficus bengalensis* (Banyan tree) has been compared with that of Glibenclamide (2 mg/kg and 0.5 mg/kg/day respectively) in moderately diabetic rats. Single dose of glycoside treatment decreased fasting blood glucose tolerance by 29 percent. The corresponding effects of glibenclamide were 25 percent and 66 percent respectively, as compared to control. 30 days of treatment, the fasting blood glucose levels went down almost to half of the pretreatment levels in both the groups.

9206-3567 Chitravanshi, V.C., Singh, A.P., Ghoshal, S., Krishna Prasad, B.N., Srivastava, V., Tandon, J.S.(Division of Microbiology, Central Drug Research Institute, Chattar Manzil, Lucknow 226 001, UP, India) **Therapeutic action of Nyctanthes arbor-tristis against caecal amoebiasis of rat.** *International Journal of Pharmacognosy*, v. 30(1): p. 71-75, 1992 (14 ref, Eng).

The 50 percent ethanolic extracts of the seeds, leaves, roots, flowers and stem of *N.arbor-tristis* were screened for antiamoebic activity in rats. These extracts showed promising effect in clearing *Entamoeba histolytica* infections in rat caecum however, they were not active in vitro.

9206-3568 Diallo, B., Vanhaelen-Fastre, R., Vanhaelen, M., Figel, C., Joyeux, M., Roland, A., Fleurentin, J.(Laboratoire de Pharmacognosie et de Bromatologie, Institute de Pharmacie, University Libre de Bruxelles, Camopus Plaine CP 205/4, Bid div Triomphe 1050 Bruxelles, Belgium) **Further studies on the hepatoprotective effects of Cochlospermum tinctorium rhizomes.** *Journal of Ethnopharmacology*, v. 36(2): p. 137-142 , 1992 (22 ref, Eng).

Aqueous, hydro-ethanolic and ethanolic extracts showed significant dose-dependent hepatoprotective action against CCl4 induced toxicity in mouse. The ethanolic extract showed a hepatoprotective activity at lower dose than silymarin. The ethanolic and hydro-ethanolic extracts exhibited remarkable effects against the induction of lipid peroxidation and hepatocyte lysis; the aqueous extract showed comparatively weaker effect. These differences were related to the chemical composition of the extracts. Among the identified of the drug, phenolic and polyphenolic compounds (gallic and ellagic acids, ellagitannins, flavonoids) carotenoids triterpenes, could be related to the biological activity.

9206-3569 Ebenhoech, A., Spadaro, O.(71, Varda Street, Rohnert Park, CA 94928, USA) **Antiepilepsirine: a new Chinese anticonvulsant herb-drug.** *Journal of Economic and Taxonomic Botany*, v. 16(1): p. 99-102, 1992 (12 ref, Eng).

Botany, history of use, chemotaxonomy, pharmacological and clinical results, chemistry and market analysis of antiepilepsirine, a novel anticonvulsant drug obtained from the piperine of white pepper (Piper nigrum) and glucobrassicin from diakon *Raphanus sativus*.

9206-3570 Egen-Schwind, C., Eckard, R. , Kemper, F.H.(Institut fur Pharmakologie und Toxikologie der Westfalischen Wilhelms-Universitat Munster, Domagkstraze-12, 4400 Munster, Federal Republic of Germany) **Metabolism of garlic constituents in the isolated perfused rat liver.** *Planta Medica*, v. 58(4): p. 301-305, 1992 (8 ref, Eng).

The metabolic and kinetic behaviour of different garlic *Allium sativum* constituents were investigated in the isolated perfused rat liver, using aqueous extracts of garlic powder as well as isolated allicin, the main product of the enzymatic degradation of alliin. Allicin (allyl thiosulfinate) showed a remarkable first pass effect and passed the liver unmetabolized only at high concentrations which caused considerable cell injuries. Diallyl disulfide and ally mercaptan were identified as metabolites of allicin, whereby diallyl disulfide probably is the metabolic precursor of allyl mercaptan as shown by perfusion with diallyl disulfide alone. The metabolites diallyl disulfide and allyl mercaptan could be determined in the perfusion medium as well as in the bile and the liver tissue. Other degradation products of garlic were also investigated in this model. Ajoenes and vinyldithiins were detected in perfusion medium after liver passage but no metabolites of them could be identified up to now.

9206-3571 Garg, S.C., Siddiqui, N.(Department of Chemistry, Dr. Hari Singh Gour Vishwavidyalaya, Sagar 470 003, MP, India) **Anthelmintic activity of Vernonia teres L. and Clerodendrum phlomidis L..** *Journal of Research and Education in Indian Medicine*, v. 11(1): p. 1-3, 1992 (7 ref, Eng).

The in vitro anthelmintic activity of the leaf juice of *V.teres* and *C.phlomidis* against earth worms, tape worms and round worms has been reported. The activity was compared against piperazine phosphate. *V.teres* has shown better activity than *C.phlomidis*. Round worms were more susceptible to the aqueous extracts than earth worms and tape worms.

9206-3572 Gilani, A.H., Aftab, K.(Department of Pharmacology, Medical College, The Aga Khan University, Karachi 74800, Pakistan) **Presence of acetylcholine-like substance(s) in Sesamum indicum.** *Archives of Pharmacal Research*, v. 15(1): p. 95-98 , 1992 (16 ref, Eng).

Alcoholic extract of *S.indicum* seeds (1-30 mg/kg) caused hypotensive activity in anesthetized rats. Heart rate also decreased at slightly higher doses (10-30 mg/kg). The extract also decreased in force and rate of atrial contractions in rats, while in isolated guinea-pig ileum and rat uterus it produced contractile responses. Presence of acetylcholine like constituent(s) has been indicated.

9206-3573 Gomes, A., Iyer, Sita C.V., Sharma, R.M.(Department of New Drug Development, Indian Institute Chemical Biology, Calcutta 700032, WB, India) **Selective toxicological studies of glycosidal fraction isolated from Maesa chisia A.Don var. angustifolia Hook f. and Th..** *Indian Journal of Pharmacology*, v. 24(2): p. 116-118 , 1992 (7 ref, Eng).

Glycosidal fraction of *M.chisia* leaves was examined in rats (100 mg/kg, p.o) and mice (50 mg/kg, p.o.), after 21 days of administration for their safe use. It did not produce any significant changes in the body weight, food and water intake, haemotological profile and histopathological studies of the major organs (liver, kidney, lungs, heart, spleen, intestine) of both species. No changes in biochemical parameters were found as compared with control rats. The above findings suggest safe use of glycosidal fraction as an antiinflammtory and antipyretic agent in rodents. NSL, New Delhi.

9206-3574 Gueritte-Voegelein, F., Sevenet, T.* , Pusset, J., Adeline, M.T., Gillet, B. , Beloeil, J.C., Guenard, D., Potier, P. , Rasolonjanahary, R., Kordon, C.(Centre national de la

Recherche Scientifique, Institut de Chimie des Substances Naturelles, 91198 Gif-sur-Yvette, France) **Alkaloids from Psychotria oleoides with activity on growth hormone release.** *Journal of Natural Products*, v. 55(7): p. 923-930 , 1992 (19 ref, Eng).

Bioactivity-guided purification of a crude alkaloid extract of leaves of *P.oleoides* has afforded a new alkaloid, psycholeine, together with quadrigemine C, a tetrameric pyrrolidinoindoline compound of unknown stereochemistry. A comparison study of NMR and cd spectra of quadrigemine C and hodgkinsine, a trimeric pyrrolidinoindoline substance suggested the stereochemistry of quadrigemine C. The structure and configuration of psycholeine was determined by spectroscopic means and chemical correlation with quadrigemine C. Psycholeine interacts with somatostatin receptros and exhibits a somatostatin antagonistric activity on GH secretion by pituitary cells in primary culture.

9206-3575 Haseenabeevi, V.M., Remani, P. , Anil, S., Vijayakumar, T.(Regional Cancer Centre, Trivandrum, Kerala, India) **Plant lectins-histochemical and cytochemical applications in Oncology.** *Indian Journal of Dental Research*, v. 2(3-4): p. 45-53 , 1991 (30 ref, Eng).

Lectins are sugar binding proteins or glycoproteins of non-immune origin derived from plants or animals with specific sugar binding capacity. This property has been used to identify structural differences between normal and malignant cells. Malignant transformation is accompanied by several changes in cell membrane. Studies have shown that the lectin binding pattern of these cells may indicate the invasive potential of tumours. Lectins can also be used as carriers. Lectins conjugated to chemotherapeutic agents have been found to be more useful in the treatment of tumours induced in animals. NSL, New Delhi.

9206-3576 Hayashi, T., Kaji, T., Takebayashi, M., Soejima, R., Morita, N., Sakamoto, M. , Sakuragawa, N.(Faculty of Pharmaceutical Sciences and Faculty of Medicine, Toyama Medical and Pharmaceutical University, 2630 Sugitani, Toyama 930-01, Japan) **Stimulants from Gardeniae Fructus for cultured endothelial cell proliferation.** *Chemical & Pharmaceutical Bulletin*, v. 40(4): p. 942-945 , 1992 (21 ref, Eng).

Bioassay-guided fractionation of Gardeniae Fructus extract (GFE) *(Gardenia jasminoides)*, which stimulates the proliferation of cultured endothelial cells, led to the isolation of glycerol and D-mannitol. Both compounds significantly increased the incorporation of {3H}thymidine and {13C}leucine into the acid-insoluble fraction of bovine aortic endothelial cell layers in culture. This clearly indicated that glycerol and D-mannitol are active components of GFE on endothelial cell proliferation. On the other hand, they did not change the number of cultured vascular smooth muscle cells from bovine aorta. Glycerol and D-mannitol may be beneficial drugs for vascular disorders.

9206-3577 Herrera, M.D., Marhuenda,E., Gibson, A.(Departmento de Farmacia y Tecnologia Farmaceutica, Facultad de Farmacia, Universidad de Sevilla, Sevilla, Spain) **Effects of genistein, an isoflavone isolated from Genista tridentata, on isolated guinea-pig ileum and guinea-pig ileal myenteric plexus.** *Planta Medica*, v. 58(4): p. 314-316, 1992 (21 ref, Eng).

The inhibitory action of the major constituents of *G.tridentata* 4',5,7-trihydroxyisoflavone (genistein), on contrations induced by agonists and electrical field stimulation of smooth muscle was analysed. Genistein inhibited twiches evoked by electrical-stimulation of strips of guinea-pig ileum with an IC50 value of 34 micro M. Genistein (34 micro M) inhibited contrations of the guinea-pig ileum by several agonsits in a non-selective, antispasmodic action and had no effect on inhibition of 3H-ACH release from ileal myenteric plexus. Genistein (34 micro M) produces an increase in cAMP levels of guinea-pig ileum which resulted in a smooth muscle relaxation which leads us to think that there must be a blockade of its phosphodiesterase.

9206-3578 Hrones, I., Sicha, J.(Katedra farmakognozie Farmaceuticke fakulty University Karlovy, Hradec Kralove, Czechoslovakia) **Biological effects of anthraglycosides. 1. Laxatives.** *Ceskoslovenska Farmacie*, v. 41(2): p. 75-77, 1992 (25 ref, Cze).

Only title translated.

9206-3579 Iguchi, M., Inagawa, H., Nishizawa, T., Okutomi, T., Morikawa, A., Soma, G.I. , Mizuno, D.(Biotechnology Research Center, Teikyo University, Nogawa, Mlyamae-Ku, Kawasaki 216, Japan) **Homeostasis as regulated by activated macrophage. V. Suppression of diabetes mellitus in nonobese diabetic mice by LPSw (a lipopolysaccharide from wheat flour).** *Chemical & Pharmaceutical Bulletin*, v. 40(4): p. 1004-1006, 1992 (11 ref, Eng).

A lipopolysaccharide from wheat flour (LPSw) which was isolated and characteried is shown to exert definitely a suppressive effect on incidence of type 1 diabetes in mice. Therapeutic effect on type 2 diabetes in patients was also obtained though only from preliminary results. The percutaneous route of administration is most favourable. The important role that precursor tumor necrosis factor, free or cell bound, may play in this mechanism is discussed.

9206-3580 Inagawa, H., Saitoh, F., Iguchi, M. , Nishizawa, T., Okutomi, T., Morikawa, A. , Soma, G.I., Mizuno, D.(Biotechnology Research Center, Teikyo University, Nogawa 907, Miyamae-ku, Kanagawa 216, Japan) **Homeostasis as regulated by activated macrophage. III. Protective effect of LPSw (lipopolysaccharide (LPS) of wheat flour) on gastric ulcer in mice as compared with those of other LPS from various sources.** *Chemical & Pharmaceutical Bulletin*, v. 40(4): p. 998-1000, 1992 (10 ref, Eng).

Protective effect of lipopolysaccharide (LPS) from various sources on gastric ulcer has been examined in mice using parenteral as well as oral route. Ulcer is induced by indomethacin, stress or alcohol. LPS was prepared from 6 species of bacteria (Escherichia coli, Pantoea agglomerans, Serratia ficaria, Enterobacter cloacae, Bordetella pertussis, Alcaligenes faecalis) and from wheat flour. When administered intravenously, LPS of *Pantoea agglomerans* was the most effective among other LPS examined. Lipopolysaccharide of wheat flour (LPSw) showed a significantly protective effect by the oral route, especially when given ad libitum in drinking water to mice.

9206-3581 Ishizuka, O., Kumazawa, N., Ohta, S., Kamogawa, A., Shinoda, M.(Faculty of Pharmaceutical Sciences, Hoshi University, 2-4-41, Ebara, Shinagawa-ku, Tokyo 142, Japan) **Effects of various methanol extracts of crude drugs on experimental subacute and chronic hepatic injury.** *Yakugaku Zasshi*, v. 112(3): p. 174-182, 1992 (18 ref, Jap, Eng).

Myricae cortex, Polygoni Avicularis Herba, Hyperici Erecti Herba, Forsythiae Fructus and Desmodii Herba suppressed significantly carbon tetrachloride induced hepatic injury in rats. Polygoni Avicularis Herba and Desmodii herba also protected the subacute hepatic injury induced by alpha-naphthyl-isothiocyanate.

9206-3582 Jayasuriya, H., Koonchanok, N.M. , Gaehlen, R.L., Mclaughlin, J.L., Chang, C.J.*(Department of Medicinal Chemistry and Pharmacognosy, Purdue University, West Lafayette, Indiana 47907, USA) **Emodin, a protein tyrosine kinase inhibitor from Polygonum cuspidatum.** *Journal of Natural Products*, v. 55(5): p. 696-698 , 1992 (13 ref, Eng).

Bioassay-directed fractionation of the roots of a Chinese medicinal plant, *P.cuspidatum*, has led to the discovery of an anthraquinone, emodin, as a strong inhibitor of a protein tyrosine kinase partially purified from bovine thymus. Comparison of the IC50 values of emodin for protein tyrosine kinase inhibitory activity with physcion and emodin-0(8)-D-glucoside, also isolated from the same plant, reveal the importance of hydroxyl groups at C-6 and C-8 for the observed activity.

9206-3583 Jeevathayaparan, S., Tennekoon, K.H. , Karunanayake, E.H., Jayasinghe, S.A.(Department of Biochemistry, Faculty of Medicine, University of Colombo, SriLanka) **Oral hypoglycaemic activity of different preparations of Momordica charantia.** *Journal of the National Science Council of Sri Lanka*, v. 19(1): p. 19-24, 1991 (10 ref, Eng).

Four different preparations of *M.charantia*, namely, fruit, juice, seed extract, freeze dried fruit juice and commercially available capsules were given orally to healthy sprague Dawley rats. Fruit juice, freeze dried fruit juice and seed extract significantly improved the ability to tolerate an oral glucose load and the oral hypoglycaemic activity of these three preparations were comparable. However, the commercially available capsules failed to improve significantly glucose tolerance of the dosage used in this study.

9206-3584 Jitoe, A., Masuda, T., Tengah, I.G.P., Suprapta, D.N., Gara, I.W. , Nakatani, N.(Laboratory of Food Chemistry, Faculty of Science of Living, Osaka City University, Sumiyoshi, Osaka 558, Japan) **Antioxidant activity of tropical ginger extracts and analysis of the contained curcuminoids.** *Journal of Agricultural and Food Chemistry*, v. 40(8): p. 1337-1340, 1992 (13 ref, Eng).

Antioxidant activities of the rhizomes of nine tropical gingers *Curcuma aeruginosa,Curcuma domestica,Curcuma heyneana,Curcuma xanthorrhiza,Zingiber cassumunar,Phaeomeria speciosa,Alpinia galanga,*and-*Amomum kepulaga* have been measured by thiocyanate and TBA methods in a water/alcohol system after extraction and fractionation with organic solvents. The quantity of three known curcuminoids, one of the potent antioxidant family of ginger species, in the extracts has been analyzed by HPLC. The antioxidant activity of the extracts of the gingers was greater than that estimated from the actual quantity of three known curcuminoids in the extracts.

9206-3585 Kamran, M.A.J., Ahmad, Q.R.(Department of Pharmacology and Therapeutics, Ayub Medical College, Abbottabad, N.W.F.P., Pakistan) **Hypocholesterolaemic effect of a crude drug mixture of Pakistani herbs in rabbits.** *International Journal of Pharmacognosy*, v. 30(1): p. 5-8 , 1992 (9 ref, Eng).

A mixture of indigenous herbs (*Prunus bokharensis, Berberis aristata, Nymphaea lotus* and *Rosa indica*) was studied for its hypocholesterolaemic effect in rabbits. The drug mixture was given orally in the form of a decoction in doses of 0.5g, 1g or 2g per kg body weight per day to cholesterol-fed and normal rabbits. The drug mixture caused significant decreases in serum cholesterol levels of hypercholesterolaemic rabbits in doses of 1 or 2g/kg/d, after one week. At the doses tested, the drug mixture did not decrease the serum cholesterol level of normal rabbits after two weeks of drug administration.

9206-3586 Kaneda, N., Pezzuto, J.M., Kinghorn, A.D.*, Farnsworth, N.R., Santisuk, T. , Tuchinda, P., Udchachon, J., Reutrakul, V.(Program for Collaborative Research in the Pharmaceutical Sciences, Department of Medicinal Chrmistry and Pharmacognosy, College of Pharmacy, University of Illinois at Chicago, Chicago, Illinois 60612, USA) **Plant anticancer agents, L. Cytotoxic triterpenes from Sandoricum koetjape stems.** *Journal of Natural Products*, v. 55(5): p. 654-659 , 1992 (30 ref, Eng).

A new ring-A secotriterpene, koetjapic acid, and five known compounds, 3-oxo-olean-12-en-29-oic acid (2) (a novel natural product), katonic acid (3), (-)-alloaronadendrene, (-)-caryophyllene oxide, and (+)-spathulenol, have been isolated and characterized from a cytotoxic ether-soluble extract of *S.koetjape* stems of these compounds, 2 and 3 demonstrated significant cytotoxic activity against cultured P-388 cells (ED50) values of 0.61 and 0.11 microg/ml, respectively). Significant, albeit less intense, cytotoxicity was also observed with a variety of cultured human cancer cells.

9206-3587 Kantak, N.M., Gogate, M.G.(Department of Physiology, Krishna Institute of Medical Sciences, Karad, 415110, MS, India) **Effect of short term adminstration of Tulsi (Ocimum sanctum) Linn. on reproductive behaviour of adult male rats.** *Indian Journal of Physiology and Pharmacology*, v. 36(2): p. 109-111, 1992 (6 ref, Eng).

Effect of feeding tulsi leaves along with the normal diet, on reproductive behaviour of adult male wister rats, was studied. Experimental animals were given tulsi extracts in graded doses of 100mg/kg, 150 mg/kg, 200mg/kg and 400mg/kg along with the normal diet, while control group only had similar normal diet. Each dose was given for 15 days and reproductery monifored in terms of score, on every alternative day. There was significant decrease in sexuel behavioural score, when tulsi leaves extract dose was increased to 200mg/kg and 400mg/kg. NSL, New Delhi.

9206-3588 Kashiwada, Y., Nonaka, G., Nishioka, I., Chang, J.J., Lee, K.H.(Natural Products Laboratory, Division of Medicinal Chemistry and Natural Products, School of Pharmacy, University of North Carolina, Chapel Hill, North Carolina 27599, USA) **Antitumor agents, 129. Tannins and related compounds as selective cytotoxic agents.** *Journal of Natural Products*, v. 55(8): p. 1033-1043 , 1992 (50 ref, Eng).

Fifty-seven tannins and related compounds, including gallotannins, ellagitannins, and condensed and complex tannins isolated from various plants including *Geranium thunbergii,Sanguisorba officinalis* and *Terminalia chebula* were evaluated for their cytotoxicities against human tumor cell lines, including malignant melanoma, lung carcinoma, ilcocecal adenocarcinoma, epidermoid carcinoma, malignant melanoma, and medulloblastoma cell lines. Among them, chebulagic acid, geraniin, sanguiin H-11, 4,5-di-O-galloylquinic acid, 1,3,4,5-tetra-O-galloylquinic acid, 1(beta)-O-galloylpedunculagin, furosin, castalagin, sanguiin H-2, vescalagin, grandinin, phyllyracoidin A,(-)-epicatechin 3-O-gallate, cinnamtannin B2 and acutissimin A exhibited moderate selective cytotoxicity against PRMI-7951 melanoma cells with ED50 values in the range of 0.1-0.8 microg/ml. Selective cytotoxicities against the melanoma cells were also observed for strictinin, pedunculagin, eugeniin, elaeocarpusin, punicacortein C, casuarinin, sanguiin H-6, procyanidin B-2,3',-di-O-gallate, procyanidin C-1 3,3',3"-tri-O-gallate, and cinnamtannin B1 with ED50 values of 1-4 microg/ml. All of the tannins were found to be inactive against lung carcinoma ileocecae adenocarcinoma, epidermoid carcinoma of nasopharnyx and medulloblastoma tumor cells.

9206-3589 Liu, G.L., Fu, P.Y., Wang,Z.Y.et al.(The First Affiliated Hospital, China Medical University, Shenyang 110001, People's Republic of China) **Effect of water extract of four Chinese herbal drugs on the binding of insulin with human erythrocyte insulin receptor.** *Chinese Journal of Integrated Traditional and Western Medicine*, v. 11(10): p. 606-607, 1991 (2 ref, Chi, Eng).

In vitro experiments have shown that the water extracts of *Trichosanthes kirilowii, Polygonatum sibiricum, Scrophularia ningpoensis* did not decrease the insulin receptor binding rate, whereas that of *Anemarrhea asphodeloides* provoked a marked inhibiting effect on the rate of binding. Significance of the results has been discussed.

9206-3590 Lu, C.X., Cheng, B.Q.(Affiliated Hospital, Ningxia Medical College, Yinchuan 750004, People's Republic of China) **Radiosensitizing effects of Lycium barbatum polysaccharide for Lewis lung cancer.** *Chinese Journal of Integrated Traditional and Western Medicine*, v. 11(10): p. 611-612, 1991 (5 ref, Chi, Eng).

Radiosensitizing effects of the *L.barbatum* polysaccharide (LBP) were studied by the model transplanted Lewis lung cancer on C57 BL mice. When LBP alone was administered, it was not obvious that LBP inhibited the growth of Lewis lung cancer. The significant radiosensitizing effects were obtained by combination of LBP and radiation. The mean numerical value of the dose modifying factors was 2.05. The results also showed certain radiation enhancement effects of LBP to acute hypoxic cells of Lewis lung cancer. LBP presented low toxicity to the mice.

9206-3591 Lu, H., Liu, G.*(Department of Pharmacology, Institute of Materia Medica, Chinese Academy of Medical Sciences, Beijing 1100050, China) **Anti-oxidant activity of dibenzocyclooctene lignans isolated from Schisandraceae.** *Planta Medica*, v. 58(4): p. 311-313, 1992 (12 ref, Eng).

The anti-oxidant activity of nine-dibenzocyclooctene lignans isolated from *S.chinensis*,*S.rubriflora*and *Kadsura longipedunculata* respectively, was studied. Seven of the 9 lignans (1mM) inhibited iron/cysteine-induced lipid peroxidation (malondialdehyde, MDA,formation) of rat liver microsomes as well as superoxide anion production in the xanthine/xanthine oxidase system. The actions of the 7 lignans were much more potent than vitamin E at the same concentration of 1mM. Among the lignans, schisanhenol was the most active one. This compound also prevented the decrease of membrane fluidity of liver microsomes induced by iron/cysteine. The results indicated that seven of the lignans such as schisanhenol have anti-oxidant activities.

9206-3592 Mahmoud, I., Alkofahi, A. , Abdelaziz, A.(Department of Pharmacognosy, Faculty of Pharmacy, Jordan University of Science and Technology, Irbid, Jordan) **Mutagenic and toxic activities of several spices and some Jordanian medicinal plants.** *International Journal of Pharmacognosy*, v. 30(2): p. 81-85, 1992 (14 ref, Eng).

A total of 46 plants were tested for direct mutagenic activity using Salmonella typhimurium strains TA98 and TA102. The most active extracts were derived from *Coriandrum sativum, Myristica fragrans, Eugenia caryophyllus* and *Zingiber officinale*. Intermediate activity was shown with *Carum carvi, Foeniculum vulgare, Brassica nigra, Nigella sativa, Lawsonia inermis, Mentha piperita, Thymus capitatus, Rheum officinale, Curcuma domestica* and *Cinnamomum zeylanicum*. Weak mutagenicity was exhibited by six additional plants, and the remaining plants tested were nonmutagenic. Mycotoxins (aflatoxin B1 and B2) were monitored using the same 46 herbs; aflatoxin B1 was detected only in *B.nigra* and *N.sativa*. The brine shrimp lethality bioassay revealed that 25 of these extracts were toxic with LC50 values in the range of 1.7-579 microg/ml (ppm).

9206-3593 Malini, T., Vanithakumari, G.(Department of Endocrinology, PG Institute of Basic Medical Sciences, Taramani Madras 600113, TN, India) **Comparative study of the effects of beta sitosterol, estradiol and progesterone on selected biochemical parameters of the uterus of ovariectomised rats.** *Journal of Ethnopharmacology*, v. 36(1): p. 51-55 , 1992 (19 ref, Eng).

Beta sitosterol isolated from *Anacardium occidentale* (SITO) estradiol (Ez) and combined treatment (SITO +Ez) induced significant increase in glycogen concentration and the activities of glucose 6-phosphate dehydrogenase (G6PDH), phosphohexose isomerase (PHI) and total lactate dehydrogenase (LDH). Progesterone (P) administration however raised only the uterine PHI and LDH activities. Co-administration of P with beta sitosterol (P+SITO) suppressed the SITO-induced increase in glycogen concentration and G6PDH activity. On the other hand, combined treatment (P+SITO) augmented total LDH activity.

9206-3594 Malone, M.H., St. John-Allan, K.M. , Bejar, E. (Department of Physiology and Pharmacology, School of Pharmacy, University of the Pacific, 751 Brookside Road, Stockton. CA 95211 USA) **Brucine lethality in mice.** *Journal of Ethnopharmacology*, v. 35(3): p. 295-297 , 1992 (7 ref, Eng).

Administration of brucine, an alkaloid isolated from dry seeds of *Strychnos nux-vomica* caused clonic convulsions. Experimental mice exhibited central nervous system depression prior to the onset of convulsions. Careful distribution and restricted sale of brucine and its salts have been recommended.

9206-3595 Marles, R., Kaminski, J., Arnason, J.T., Pazos-Sanou, L. , Heptinstall, S., Fischer, N.H., Crompton, C.W.N100, Awang, D.V.C. (Ottawa-Carleton Institutes of Biology and Chemistry, University of Ottawa, Ottawa, Ontario, Canada K1N 6N5) **A bioassay for inhibition of serotonin release from bovine platelets.** *Journal of Natural Products*, v. 55(8): p. 1044-1056 , 1992 (87 ref, Eng).

A biossay developed to study agents capable of inhihibiting the release of serotonin from bovine blood platelets is a simple, inexpensive, and reproducible high-throughput bioassay suitable for quality control of feverfew, *Tanacetum parthenium*, a crude drug with proven migraine prophylactic activity. The bioassay, which requires no experimental animals or human subjects, was used to assess the in vitro activity of *T.parthenium* samples grown from seed obtained from 10 different regions of Europe. The activity was found to vary significantly within and between samples, with no geographical correlation. Serotonin release inhibitiion was shown to be significantly correlated with the content of the germacranolide sesquiterpene lactone, parthenolide, although other sesquiterpene lactones from this plant and other members of the Asteraceae were also shown to be active. The activities of six other species of *Tanacetum*, as well as of *Artemisia absinthium* (wormwood) and *Zingiber officinale* (ginger), and two commercial drugs forophylaxis, verapamil migraine prophylaxis, verapamil hydrochloride and propranolol hydrochloride, were also assessed. The relevance of the bovine platelet serotonin release inhibition bioassay to antimigraine research is discussed.

9206-3596 Matsuda, H., Nakamura, S., Shiomoto, H., Tanaka, T., Kubo, M.(Faculty of Pharmaceutical Sciences, Kinki Universiuty, 3-4-1, Kowakae, Higashiosaka Osaka 577, Japan) **Pharmacological studies on leaf of Arctostaphylos uva-ursi (L) Spreng. IV. Effect of 50 percent methanolic extract from Arctostaphylos uva-ursi (L.) Spreng. (Bearberry leaf) on melanin synthesis.** *Yakugaku Zasshi*, v. 112(4): p. 276-282, 1992 (13 ref, Eng).

Arbutin and U-ext isolated from *A.uva-ursi* leaf exhibited inhibitory effect on tyrosinase activity. Furthermore, the U-ext inhibited the production of melanin from DOPA by tyrosinase and from dopachrome by autoxidation.

9206-3597 Melis, M.S.(Departamento de Biologia, Setor de Fisiologia, Faculdade de Filosofia, Ciencias e Letras, Ribeirao Preto, Universidade de Sao Paulo, 14.049 Rebeirao Preto, SP, Brazil) **Renal excretion of stevioside in rats.** *Journal of Natural Products*, v. 55(5): p. 688-690 1992 (18 ref, Eng).

Stevioside (a glycoside extracted from the leaves of *Stevia rebaudiana*) was infused iv at 4 concentrations (4,8,12 and 16 mg/kg) to Wistar rats. No significant changes in inulin clearance (CIn) were observed in the test animals. The stevioside infusion induced a significant increase in the p-aminohippuric acid clearance (CPAH), fractional sodium excretion, urinary flow as percent of glomerillar filtration rate, and glucose clearance when compared to controls, but these effects were absent with the dose of 4 mg/kg. The stevioside clearance was higher than the CIN and lower than the CPAH at all the doses studied. These results indicate that the stevioside is secreted by renal tubular epithelium and induces diuresis and natriuresis and a fall in renal tubular reabsorption of glucose.

9206-3598 Mitra, s., Gole, M., Samajdar, K. , Sur, R.K., Chakraborty, B.N.(Animal Physiology and Biochemistry Laboratory, Zoology Department, Calcutta University, 35, Ballygunge Circular Road, Calcutta 700 019, India) **Antihepatotoxic activity of Chelidonium majus.** *International Journal of Pharmacognosy*, v. 30(2): p. 125-128, 1992 (19 ref, Eng).

The efficacy of an alcohol extract of *C.majus* as an antihepatotoxic agent was tested on rats with CCl4-induced hepatic injury. CCl4 (1ml/kg; twice a week) and extract (125 mg/kg/day) were administered simultaneously. The parameters studied to assess liver damage were plasma ALAT, ASAT, AlP, LDH, bilirubin, cholesterol and liver histology. Significant protection toward CCl4-induced elevation of plasma enzymes, changes in bilirubin, cholesterol, and microscopic liver damage was observed. These results indicate the hepatoprotective action of the extract.

9206-3599 Mohri, T., Chiba, K., Yamazaki, M. , Shimizu, M., Morita, N(The 2nd Division of the Research Laboratory for Development of Medicine, Hokuriku University School of Pharmacy, Kanazawa, Ishikawa 920-11, Japan) **Activation of PC12 cells by lipophilic components of Panax ginseng.** *Planta Medica*, v. 58(4): p. 321-323, 1992 (19 ref, Eng).

The lipid soluble fraction of *P.ginseng* has been found to possess a stimulatory effect on a para-neuronal culture cell line, namely PC 12 cells. Addition of the diethyl ether extract (0.025-0.1 mg/ml) of Ginseng radix to a culture medium promoted the outgrowth of neurites from cells dose-dependently as well as their ready differentiation to respond to carbachol and high KC1-evoked membrance depolarization to induce free Ca2+-accumulation in the cells with in a week of culture. Effective constituents of the extract were confined to four major substances detected in the extremely lipophilic front area on silica gel TLC.

9206-3600 Murakami, A., Tanaka, S., Ohigashi, H., Hirota, M., Irie, R., Takeda, N. , Tatematsu, A., Koshimizu, K.(Department of Food Science and Technology, Faculty of Agriculture, Kyoto University, Kyoto 606, Japan) **Possible anti-tumour promoters: Bi-and tetraflavonoids from Lophira alata.** *Phytochemistry*, v. 31(8): p. 2689-2693, 1992 (14 ref, Eng).

Three possible flavonoid-type anti-tumour promoters were isolated from the bark of *L.alata* using an in vitro short-term assay, Epstein-Barr virus (EBV) early antigen (EA) induction test. One of the flavonoids was identified as lophirone F. The other two, named azobechalcone A and isolophirachalcone, were a new biflavonoid and a tetraflavonoid, respectively. Azobechalcone A (5micro M) and isolophirachalcone (5micro M) showed potent inhibitory activities (83 percent and 65 percent, respectively) against EBV-EA induction by a tumour promoter, teleocidin B-4 (50 nM). Lophirone F was less active(18 percent at the same dose) than azobechalcone A and isolophirachalcone.

9206-3601 Newman, R.K., Betschart, A.A. , Newman, C.W., Hofer, P.J.(Montana State University, Bozeman, MT 59717 and Western Regional Research Center, USDA, ARS, Albany, CA 94710, USA) **Effect of full-fat or defatted rice bran on serum cholesterol.** *Plant Foods for Human Nutrition*, v. 42(1): p. 37-43 , 1992 (24 ref, Eng).

The effects of full fat rice bran (FFRB) and defatted rice bran (DFRB) diets on serum lipids in cholesterol fed chicks have been evaluated. Two pilot trials were conducted wherein FFRB was fed in a relatively high-fat diet and the second compared FFRB with DFRB in lower fat diets. FFRB appears to increase high-density lipoprotein cholesterol, but does not always affect total cholesterol whereas DFRB may increase all three serum lipid components.

9206-3602 Ohta, S., Sakurai, N., Kamogawa, A. , Yaguchi, Y., Inoue, T., Shinoda, M.(Faculty of Pharmaceutical Sciences, Hoshi University, 2-4-41, Ebara, Shinagawa-ku, Tokyo, 142, Japan) **Protective effects of the bark of Myrica rubra Sieb. et Zucc. on experimental liver injuries.** *Yakugaku Zasshi*, v. 112(4): p. 244-252, 1992 (18 ref, Eng, Jap).

Methanol extract of *M.rubra* bark showed protective effects on liver injuries induced by carbon tetrachloride (CCl4) and alpha-naphthylisothiocyanate (ANIT) in rats. The fractions and some compounds from the bark of *M.rubra* were investigated for the protection against CCl4 including liver injuries in rats. The active principles for the protection were recognized in two fractions obtained from the methanol extract, and one of the active principles in the fraction was found to be myricanol 5-O-beta-D-(6'-O-galloyl)-glucopyranoside. In addition, these fractions protecting liver injuries induced by CCl4 showed significant protective effects against cholestasis induced by ANIT.

9206-3603 Ozaki, Y.(Division of Pharmacognosy and Phytochemistry, National Institute of Hygienic Sciences, 18-1, Kamiyoga 1-Chome, Setagaya-ku, Tokyo 158, Japan) **Antiinflammatory effect of tetramethylpyrazine and ferulic acid.** *Chemical & Pharmaceutical Bulletin*, v. 40(4): p. 954-956 , 1992 (24 ref, Eng).

Tetramethylpyrazine (TMP) is one of the alkaloids contained in *Ligusticum wallichii*. Ferulic acid (FA) is a phenolic compound contained in *L.wallichii* and *Angelica sinensis* L. Both compounds significantly inhibited the edema induced by carrageenin, the increase of the dye leakage induced by acetic acid and the granuloma formation induced by cotton pellet. And also, TMP and FA inhibited the number of writhes induced by acetic acid. It is suggested that both compounds have the antiinflammatory effect and the analgesic effect, and both compounds exert an antiinflammatory effect at the early and the late stages of processes in the inflammatory pathology.

9206-3604 Pradhan, N.R., Misra, S.K.(Department of Veterinary Medicine and Public Health, Bidhan Chandra Krishi Viswavidyalaya, Mohanpur-741252, Nadia, West Bengal) **Ultrastructural studies on the effect of Tefroli Vet granules in hepatotoxicity induced by carbon tetrachloride in goats.** *Indian Veterinary Journal*, v. 69(7): p. 627-630 , 1992 (15 ref, Eng).

Tefroli, a herbal liver tonic containing *Andrographis paniculata, Tephrosia purpurea, Eclipta alba, Ocimum sanctum* and *Termilia chebula* has been found to be useful in correcting the hepatocellular damage due to CCl4 damage in goats.

9206-3605 Puhlmann, J., Knaus, U., Tubaro, L. , Schaefer, W., Wagner, H.*(Institute of Pharmaceutical Biology, University of Munich, Karlstrasse 29, D-8000 Munich 2, Germany) **Immunologically active metallic ion-containing polysaccharides of Achyrocline satureioides.** *Phytochemistry*, v. 31(8): p. 2617-2621, 1992 (19 ref, Eng).

Two homogeneous, metallic ion-containing pectic polysaccharides with mean M(r)S of 7600 and 15000 were isolated from dried aerial parts of *A.satureioides* by anion exchange column chromatography on DEAE-Sepharosa CL-6B and gel filtration column chromatography on Fractogel TSK HW-50 (S). The structures, as determined by methylation analysis, carboxyl reduction, and partial acid hydrolysis, were shown to be rhamnogalacturonans. Both pectins show a pronounced anticomplementary effect in vitro. The larger carbohydrate AS4 of higher M(r) exerts anti-inflammatory activity and a strong enhancement of phagocytosis in vivo.

9206-3606 Ravindran, G.(Department of Food Science and Technology, Faculty of Agriculture, University of Peradeniya, Peradeniya, Sri Lanka) **A study on the flatus potential of dietary fibre from some legumes.** *Journal of National Science Council of Sri Lanka*, v. 18(2): p. 127-132, 1990 (14 ref, Eng).

The in-vitro flatus causing tendancy of soluble and insoluble fibre fractions from four legumes, namely, blackgram, greengram, soybean and wingedbean by *Clostridium perfringens* was investigated. The gas production from the soluble fibre fraction of blackgram, soybean and wingedbean was relatively high and was similar to that from raffinose, whereas gas production from the soluble fibre fraction of greengram was low. The insoluble fibre fractions of all four legumes were found to have little or no flatus activity. Gas chromatographic analysis of the flatus gases revealed H2 and CO2 to be predominent components of gas production.

9206-3607 Schauder, S.(Universitats-Hautklinik, von-Siebold-Strasse 3, 3400 Gottnigen, Germany) **(Phototoxic and photoallergic reactions).** *Deutsche Apotheker Zeitung*, v. 132(21): p. 1123-1128 , 1992 (16 ref, Ger).

Phototoxic and phtoallergic reactions to skin due to various substances including some plants (*Heracleum mantegazzianum*) have been discussed.

9206-3608 Sheriff, D.S.(Department of Biochemistry, Dr. B.R. Ambedkar Medical College, K.G.Halli, Bangalore 5600048 Karnataka, India) **Effect of gossypol on tissue levels of glutathione and thiobarbituric acid reactive products in rats.** *Indian Journal of Experimental Biology*, v. 30(8): p. 734-735, 1992 (11 ref, Eng).

Gossypol caused low generation of lipid peroxides, measured as thiobarbituric acid reactive products, without causing significant changes in tissue glutathione levels. This effect was more pronounced in liver and testis as compared to other tissues. In vitro effect of gossypol to inhibit peroxidation as observed in vivo suggested that binding of gossypol to plasma membrane may result in inhibition of lipid peroxide generation.

9206-3609 Shi, Y.Q., Chen, G.Z. et al.(General Hospital of PLA, Beijing 100853, People's Republic of China) **Effect of Xiao Banxia-Fuling decoction on the amplitude of gastric electrical spike wave in rats after irradiation of the gastric region.** *Chinese Journal of Integrated Traditional and Western Medicine*, v. 11(10): p. 613-614, 1991 (4 ref, Chi, Eng).

The amplitude of the spike wave which was reduced significantly by 15 Gy irradiation, was significantly raised by the drug at the 10th, 14th day in the corpus and 7th, 10th, 14th and 21st day in the antrum. This Chinese herbal drug has some beneficial effects on preventing the inhibition of gastric motility and reducing the radiation reaction of the digestive system.

9206-3610 Singh, I.P., Talwar, K.K., Arora, J.K., Chhabra, B.R., Kalsi, P.S.*(Department of Chemistry, Punjab Agricultural Univeristy, Ludhiana 141004, Punjab, India) **A biological active guaianolide from Saussurea lappa.** *Phytochemistry*, v. 31(7): p. 2529-2531, 1992 (12 ref, Eng).

4beta-Methoxydehydrocostus lactone has been isolated from costus roots, *S.lappa*. Its structure and stereochemistry have been established by spectral methods and chemical correlation with dehydrocostus lactone. The compound displayed significant biological activity as a plant growth regulator.

9206-3611 Sinha, M., Tewari, P.V., Pati, H.K.(Department of Prasuti Tantra Institute of Medical Sciences, Banaras Hindu University, Varanasi-221005, UP, India) **Evaluation of antifertility effect of Jayanti and Tekar.** *Journal of Research and Education in Indian Medicine*, v. 11(2): p. 3-12, 1992 (8 ref, Eng).

Jayanti, *Sesbania sesban* and Tekar, *Clerodendrum phlomidis*, showed highly significant antiovulatory action in albino rats.

9206-3612 Soglu, A.E., Tekol, Y., Suer, C.(Department of Pharmacology, Medical Faculty, Erciyes University, Kayseri 38039, Turkey) **Effects of nicotine on pain and aggressivity and antagonism of these effects by mecamylamine.** *Hamdard Medicus*, v. 35(2): p. 60-65, 1992 (17 ref, Eng).

Nicotine caused a dose-dependent decrease (1.25 and 2.5 mg/kg) on writhing score of the experimental mice. At the dose of 0.75 mg/kg i.p. nicotine lowered attack score and time of the mice but there was no significant change at 0.5 mg/kg dosage. These effects of nicotine were blocked by 2.5 mg/kg mecamylamine, which was given 15 minutes before nicotine administration.

9206-3613 Suzuki, Y., Ito, Y., Konno, C., Furuya, T.(Medical & Membrane Research Laboratory, Nitto Denko Corporation, 1-1-2-Shinohozumi, Ibaraki, Osaka 567, Japan) **Effects of tissue cultured ginseng on the function of the stomach and small intestine.** *Yakugaku Zasshi*, v. 111(12): p. 765-769, 1991 (10 ref, Jap, Eng).

Fifty percent ethanol extracts of the tissue cultured and cultivated ginseng stimulated gastrointestinal propulsion in mice. The tissue cultured ginseng also inhibited ulcer and restraint stress, and ligature of the pylorus. Cultivated ginseng showed no such inhibitory activity.

9206-3614 Suzuki, Y., Ito, Y., Konno, C., Furuya, T.(Medical & Membrane Research Laboratory, Nitto Denko Corparation, 1-1-2 Shimohozumi, Ibaraki, Osaka 567, Japan) **Effects of tissue cultured ginseng on gastric secretion and pepsin activity.** *Yakugaku Zasshi*, v. 111(12); p. 770-774, 1991 (10 ref, Jap, Eng).

Fifty percent ethanol extracts of both cultured and cultivated ginsengs reduced gastric secretion and acid output in pylorus-ligated rats. They did not affect pepsin activity. Tissue cultured ginseng inhibited histamine and pentagastrin-induced acid secretion in rats, whereas the cultivated ginseng showed no such effect. They also suppressed acid secretion induced by 2-deoxy-D-glucose and baclofen. However, they had no effect on acid secretion induced by vagal stimulation.

9206-3615 Teuscher, E., Lindequist, U.(Fachrichtung Pharmazie, Lehrstuhl Pharmazeutische Biologie der Ernst-Moritz, Arndt-Universitat Greifswald, Jahnstrasse 15a, O-2200 Greifswald, Federal Republic of Germany) **Biogenetic poisons.** *Deutsche Apotheker Zeitung*, v. 132(6): p. 227-240 , 1992 (23 ref, Ger).

Distribution of biogenetic poisons in plants and, structure and activity of active principles have been reviewed.

9206-3616 Tischler, M., Cardellina II, J.H. , Boyd, M.R.*, Cragg, G.M.(Laboratory of Drug Discovery Research and Development, Division of Cancer Treatment, National Cancer Institute, Building 1052, Maryland 21702-1201, USA) **Cytotoxic quassinoids from Cedronia granatensis.** *Journal of Natural Products*, v. 55(5): p. 667-671 , 1992 (14 ref, Eng).

Two quassinoids, sergiolide and isobrucein, to which the screening panel cell lines exhibited upto 1000-fold range of differential sensitivity, have been isolated from the twigs and leaves of *C.granatensis*. At extremely low concentrations, the compounds typically produced LC50-level responses against a majority of the melanoma lines and several of the colon, lung, and other solid tumor lines.

9206-3617 Wei, B.L., Lin, C.N., Won, S.J.(Natural Products Research Center, Kaohsiung Medical College, Kaohsiung, Taiwan 807, Republic of China) **Nakahalene and cytotoxic principles of Formosan Rhamnus species.** *Journal of Natural Products*, v. 55(7): p. 967-969 , 1992 (10 ref, Eng).

A new naphthalene compound, named nakahalene, has been isolated from the root bark of *R.nakaharai*(Rhamnaceae) together with chrysophanol, physcion, emodin, rhamnocitrin, and kaempferol. Nakahalene has been characterized as 2-acetyl-3-methyl-6-methoxylnaphthalene-1, 8-diol. The cytotoxic effects of the isolated anthraquinones of *R.formosana* and *R.nakaharai* were investigated. Frangulin B exhibited most significant cytotoxicity against human hepatoma PLC/PRF/5 and KB cell lines.

9206-3618 Xu, R.H., Chai, B.F., Zhu, Y.P.(Shanghai Institute of Traumatology and Orthopedics, Shanghai 200025, People's Republic of China) **Histochemical study on effect of Radix Salviae Miltiorrhizae on growth of isolated cells from embryonic chicken frontal bone cultured in vitro.** *Chinese Journal of Integrated Traditional and Western Medicine*, v. 11(11): p. 668-670, 1991 (16 ref, Chi, Eng).

Experiments have shown that the maturation of the osteoblast-like cells was accelerated by Radix Salviae Miltiorrhizae. Secretion of the collagenous substance, positive alkaline phosphatase reaction and deposition of mineral on the collagenous substance, forming bone nodules, were found to be enhanced. But unduly high concentration of Radix Salviae Miltiorrhizae could lead to inhibition of osteoblast-like cell growth. The optimal concentration of the drug was 0.2 percent in culture medium.

9206-3619 Yesilada, E., Mutlugil, A., Sener, B.(Gazi University, Faculty of Pharmacy, Department of Pharmacognosy, 06330, Ankara, Turkey) **The antiinflammatory principle of the roots of Paeonia daurica.** *International Journal of Pharmacognosy*, v. 30(1): p. 66-70, 1992 (8 ref, Eng).

Paeonoside and paeonol have been identified as active antiinflammatory principles in ethanol extract of the roots of *P.daurica*.

9206-3620 Zheng, G., Kenney, P.M., Lam, L.T.(LKT Laboratories Inc., 2010 East Hennepin Avenue, Minneapolis, Minnesota 55413, USA) **Anethofuran, carvone, and limonene: Potential cancer chemopreventive agents from dill weed oil and caraway oil.** *Planta Medica*, v. 58(4): p. 338-341, 1992 (20 ref, Eng).

Bioassay-directed fractionation of dill weed oil and caraway oil, respectively , from the plants *Anethum graveolens* and *Carum carvi* has led to the isolation of three monoterpenes, anethofuran, carvone, and limonene. Their structures were determined on the basis of spectral analysis. These compounds induced the detoxifying enzyme glutathione S-transferase in several mouse target tissues. The alpha, beta -unsaturated ketone system in carvone appeared to be critical for the high enzyme-inducing activity.

9206-3621 Zheng, G.Q., Kenney, P.M., Lam, K.T.*(LKT Laboratories Inc., 2010 East Hennepin Avenue, Minneapolis, Minnesota 55413, USA) **Sesquiterpenes from clove (Eugenia caryophyllata) as potential anticarcinogenic agents.** *Journal of Natural Products*, v. 55(7): p. 999-1003 , 1992 (28 ref, Eng).

Bioassy-directed fractionation of clove terpenes from the plant *E.caryophyllata* has led to the isolation of the following five active known compounds: beta-caryophyllene, beta-caryophyllene oxide{2}, alpha-humulene{3}, alpha-humulene epoxide I, and eugenol. Their structures were determined on the basis of spectral analysis (hreims, 1H and 13C NMR). These compounds showed significant activity as inducers of the detoxifying enzyme glutathione S-transferase in the mouse liver and small intestine. The ability of natural anticarcinogens to induce detoxifying enzymes has been found to correlate with their activity in the inhibition of chemical carcinogenesis. Thus, these sesquiterpenes show promise as potential anticarcinogenic agents.

Antimicrobial Activity

9206-3622 Ahmad, A., Khan, K.A., Sultana, S. , Siddiqui, B.S., Begum, S., Faizi, S. , Siddiqui, S.(Department of Microbiology, University of Karachi, Karachi 75270 Pakistan) **Study of the in vitro antimicrobial activity of harmine, harmaline and their derivatives.** *Journal of Ethnopharmacology*, v. 35(3): p. 289-294 , 1992 (11 ref, Eng).

Alkaloids harmine and harmaline (harmidine) isolated from *Peganum harmala* seeds were tested against eleven gram-positive and twelve gram-negetive bacteria and sixteen species of fungi. Harmine exhibited antimicrobial activity while harmaline and harmol showed activity to a lesser extent.

9206-3623 Hakizamungu, E., Puyvelde, L.V. , Wery, M.(Meretak 101, B-9250, Waasmunster, Belgium) **Screening of Rwandese medicinal plants for anti-trichomonas activity.** *Journal of Ethnopharmacology*, v. 36(2): p. 143-146 , 1992 (8 ref, Eng).

A series of 30 medicinal plants used in Rwandese traditional medicine has been screened for antitrichomonas activity against the protozoan *Trichomonas vaginalis*. Seventeen plants showed anti-trichomonas activity.

9206-3624 Heinrich, M., Kuhnt, M., Wright,C.W., Rimpler, H., Phillipson, J.D. , Schandelmaier, A., Warhurst, D.C.(Institut fur Pharmazeutische Biologie Universitat Schanzlestr. 1, D-7800 Freiberg, FRG) **Parasitological and microbiological evaluation of Mixe Indian medicinal plants (Mexico).** *Journal of Ethnopharmacology*, v. 36(1): p. 81-85 , 1992 (14 ref, Eng).

The activity of 29 plant extracts, selected on the basis of an ethnobotanical study in mexico was evaluated against *Entaamoeba histolytica*, three bacteria and two fungi and results are discussed. After separation of these extracts between CH2 Cl2 and H2O the resulting phases were also evaluated pharmacologically and toxicologically.

9206-3625 Himejima, M., Kubo, I.(Division of Entomology and Parasitology, College of Natural Resources, University of California, Berkeley, California 94720, USA) **Antimicrobial agents from Licaria puchuri-major and their synergistic effect with polygodial.** *Journal of Natural Products*, v. 55(5): p. 620-625 , 1992 (16 ref, Eng).

The n-hexane extract of the seeds of *L.puchuri-major* contained antimicrobial principles in quantity, with a broad antimicrobial spectrum. The steam-distillate of the n-hexane extract retained the original broad antimicrobial activity, while the residue (almost exclusively, lauric acid) exhibited almost no-activity. GC-MS analysis showed that the distillate contained four phenolic compounds, seven monoterpenes, and one sesquiterpene. Most of the pure compounds showed broad, but moderate, antimicrobial activity. While polygodial did not synergise the antifungal activity of any of the compounds tested, the antifungal activity of polygodial was significantly increased when combined with aromatic substances isolated from seeds i.e. anethole, safrole or methyleugenol.

9206-3626 Iwu, M.M., Klayman, D.L.(Division of Experimental Therapeutics, Water Reed Army Institute of Research, Washington, DC 20307, USA) **Evaluation of the in vitro antimalarial activity of Picralima nitida extracts.** *Journal of Ethnopharmacology*, v. 36(2): p. 133-135 , 1992 (18 ref, Eng).

Extracts of *P.nitida* seeds, fruit rind and stem bark showed remarkable inhibitory activity against drug resistant clones of *Plasmodiumm falciparum* at doses of 1.23-32 micro g/ml. The dichloromethane extract of the fruit rind and was most active of the crude extracts, with IC 50 values of 1.61 micro g/ml for the Indochina (W-2), clone and 2.41 micro g/ml for Sierra Leone (D-6), clone. An alkaloid fraction obtained from the methanol extract of the stem bark gave an IC 50 value of 2.00 micro g/ml and 1.23 micro g/ml in the W-2 and D-6 clones respectively. The result supports the continued ethnomedical exploration of the plants as a potential antimalarial drug.

9206-3627 Panilio, A.B., Buschi, C.B., Tomes, C.N., Viale, A.A. (Departamento de Quimica Organica Facultad de Ciencias Exactas y Naturales, Universidad de Buenos Aires, Pabellon 2, Ciudad Universitaria 1428 Buenos Aires, Argentina) **Antimicrobial constituents of Gomphrena martiana and Gomphrena boliviana.** *Journal of Ethnopharmacology*, v. 36(2): p. 155-161 , 1992 (25 ref, Eng).

The antimicrobial activity of extracts and constituents of *G.martiana* and *G.boliviana* was evaluated against 20 microorganism, including gram positive and gram negative bacteria, an acid fast bacterium, a fungus and two yeasts. Fractionation of each petroleum ether extract yielded the 5,6,7-trisubstituted flavones that were separately tested showing high activity against *Mycobacterium phlei* (MIC 15,20 and 75 micro g/ml approaching that of commercial herbicides. Other natural and synthetic flavonoids with diverse structures were also tested to define structure activity relationships. Each EtOH extract was subsequently fractionated and monitored by bioassay leading to isorhamnetin 3-O-beta robinobioside (MIC 50 mg/ml) in both instances. This glycoside is reported for the first time in *G.boliviana*.

9206-3628 Paulo, M.de Q., Barbosa-Filho, J.M. , Lima, E.O., Maia, R.F., Barbosa, R.de Cassia B.B.C., Kaplan, M.A.C.(Nucleo de Pesquisas de Products Naturais, CCS, Universidade Federal do Rio de Janeiro 21941, Rio de Janeiro, RJ, Brazil) **Antimicrobial activity of benzylisoquinoline alkaloids from Annona salzmanii.** *Journal of Ethnopharmacology*, v. 36(1): p. 39-41 , 1992 (7 ref, Eng).

Bark of *A.salzmanii* was found to contain four benzylisoquinoline alkaloids namely reticuline, anonaine, laurelliptine and isoboldine. Only anonaine possesses some antibacterial property while all four alkaloids show some antifungal activity.

9206-3629 Qamar, S., Chaudhary, F.M.(PCSIR Laboratories Complex, Shahrah-e-Jalaluddin Roomi, Lahore, Pakistan) **Antifungal activity of some essential oils from local plants.** *Pakistan Journal of Scientific and Industrial Research*, v. 34(1): p. 30-31, 1991 (18 ref, Eng).

Essential oils of *Acorus calamus* (roots and adventitious roots), *Callistemon lanceolatus* (flowers and leaves), *Laurus nobilis* (leaves) and *Cymbopogon martini* (leaves) were screened for antifungal activity against pathogenic fungi and yeast. *C.martini* var. *motia* showed maximum inhibitory effect against all the test organisms.

9206-3630 Rojas, A., Hernandez, L. , Pereda-Miranda, R., Mata, R. (Facultad de Medicina, Universidad Autonoma de Queretaro, Centro Universitario, 76010 Queretaro, Mexico) **Screening for antimicrobial activity of crude drug extracts and pure natural products from Mexican medicinal plants.** *Journal of Ethnopharmacology*, v. 35(3): p. 275-283 , 1992 (27 ref, Eng).

The antimicrobial activities of 44 pure natural compounds and two derivatives were determined . Of these, only 23 compounds were effective in inhibiting the growth of the tested organisms. The significant activity exhibited for extracts of *Ratibida latipalearis, Teloxys graveolens, Dodonaea viscosa, Hyptis albida, H.pectinata, H.suaveolens* and *H.verticillata* tends to support their traditional use as anti-infective agents. Only the extract of *Hintonia latiflora* was inactive.

9206-3631 Suresh Kumar, M., Chauhan, U.K.(School of Environmental Biology, APS University, Rewa 486003, MP,India) **A study of antimicrobial activity of Calotropis procera leaf extract.** *Geobios*, v. 19(2&3): p. 135-137, 1992 (5 ref, Eng).

Leaf extract of *C.procera* was found to be active against all microorganisms tested. Both gram negative and gram positive bacterial species were inhibited. Fungal species were very much sensitive to the extract when compared wtih bacterial pathogens. *Staphylococcus albus* was completely resistant to this extract.

9206-3632 Vishwakarma, R.A., Mehrotra, R. , Tripathi, R., Dutta, G.P.(Central Institute of Medicinal and Aromatic Plants, Lucknow 226 016, UP, India) **Stereoselective synthesis and antimalarial activity of alpha-artelinic acid from artemisinin.** *Journal of Natural Products*, v. 55(8): p. 1142-1144 , 1992 (14 ref, Eng).

alpha-Artelinic acid, a potent, stable, and water-soluble antimalarial agent, was synthesized from artemisinin, the sesquiterpene lactone endoperoxide isolated from *Artemisia annua*. The blood schizontocidal antimalarial activity of alpha-artelinic acid evaluated against *Plasmodium knowlesi* is also reported.

Insecticidal & Piscicidal Activity

9206-3633 Bastos, J.K., Gottlieb, O.R. , Kaplan, M.A.C., Santos Filho, D.S., Sarti, S.J., Rodrigues, C.P.S.(Departamento de Ciencias Farmaceuticas-Faculdade de Ciencias Farmaceuticas USP-14049-Riberiao Preto-Sp, Brasil) **Molluscicidal properties of cinnamodial isolated from Capsicodendron dinisii.** *Revista de Ciencias Farmaceuticas*, v. 13: p. 83-89 , 1991 (23 ref, Spa, Eng).

Cinnamodial, a drimane type sesquiterpene dialdehyde which has a potent mollusicidal activity against *Biomphalaria glabrata*, has been isolated by chromatography from the bark of *C.dinisii*. Cinnamodial was active against both adult molluscs and embryos.

9206-3634 Giazzi, J.F., Buainain, A., Pozetti, G.L., Haraguchi, I. , Yoshida, L.(Departamento de Analises Clinicas-Faculadade de Ciencias Farmaceuticas-UNESP-14800-Araraquara-SP, Brasil) **Inhibitory activity of larval stage development of Ancylostomatidae by extracts of some popular medicinal plants.** *Revista de Ciencias Farmaceuticas*, v. 13: p. 91-97 , 1991 (19 ref, Eng, Spa).

Out of 27 aqueous alcoholic extracts of popular medicinal plants investigated *Vinca alba*(Beijo-branco) and *Caesalpinia ferrea*(Pau-ferro) exhibited some activity against Ancylostomatidae larval stage development.

9206-3635 Hebbalkar, D.S., Hebbalkar, G.D. , Sharma, R.N., Joshi, V.S., Bhat, V.S.(Organic Division, National Chemical Laboratory, Pune, Maharashtra, India) **Mosquito repellent activity of oils from Vitex negundo Linn. leaves.** *Indian Journal of Medical Research*, v. 95A(July): p. 200-203, 1992 (12 ref, Eng).

Oil obtained from steam distillate of *V.negundo* leaves was fractionated by column chromatography. Mosquito repellence activity, as evaluated against *Aedes aegypti* was mainly confined to the most polar fractions. The protection period against mosquito bites by polar fractions ranged between 1-3 h. However, the mean protection period values of these fractions did not show significant increase in the subsequent subfractions.

9206-3636 Imbabi, E.S., Abu-al-Futuh, I.M.(Faculty of Pharmacy, Department of Pharmaceutical Chemistry, University of Khartoum, P O Box 1996, Khartoum, Sudan) **Investigation of the molluscicidal activity of Tamarindus indica.** *International Journal of Pharmacognosy*, v. 30(2): p. 157-160, 1992 (11 ref, Eng).

Extracts from *T.indica* fruit pulp were found to have molluscicidal activity against *Bulinus truncatus* snails. Activity was thought to be due to the presence of saponins.

9206-3637 Kady, M.M., Brimer, L., Furu, P. , Nielsen, H.M., Thiilborg, S.T., Thastrup, O., Christensen, S.B.(Department of Organic Chemistry, Royal Danish School of Pharmacy, Universitetsparken 2, DK-2100 Copenhagen, Denmark) **The molluscicidal activity of coumarins from Ethulia conyzoides and of dicumarol.** *Planta Medica*, v. 58(4): p. 338-341, 1992 (20 ref, Eng).

The molluscicidal principles of *E.conyzoides* were identified as ethuliacoumarin A and isoethuliacoumarin A. Ethuliacoumarin A possessed an LC90 between 19 and 23.5 ppm depending on the age of the snail against *Biomphalaria glabrata*, and between 12 and 15 ppm against *Bulinus truncatus*. In addition, ethuliacoumarin A was found to be cercaricidal at 25 ppm and ovicidal. Ethuliacoumarin has the structural requirements considered essential for anticoagulant activity. Consequently the anticoagulant dicumarol was tested and found to be moluscicidal in the range from 2.5 to 10 ppm. In contrast, the coumarin anticoagulant warfarin did not show molluscicidal activity.

9206-3638 Kalavathi, P., David, B.V., Peter, C.(Fredric Institute of Plant Protection & Toxicology, Padappai 601301, India) **Evaluation of Vitex negundo (Verbenaceae) for the control of certain insect pests of crops.** *Pesticide Research Journal*, v. 3(1): p. 79-85, 1991 (12 ref, Eng).

Insecticidal activity of *V.negundo* was evaluated against *Earias vittella*, *Diaphania indica* and *Epilachna septima*. Among the four extracts of leaf evaluated, acetone extract was found to be the best. The concentrations required to cause 100 percent mortality of II instar larvae of *E.vittella*, *D.indica* and *E.septima* were 0.05, 0.40 and 0.50 percent respectively. The LC50 estimates to the three species are also mentioned. At 0.04 percent concentration 100 percent repellent activity to *E.vittella* was recorded. A combination of leaf extract of *V.negundo* with endosulfan recorded higher levels of mortality of *E.vittella* larvae than the individual components. NSL, New Delhi.

9206-3639 Mwangi, J.W., Addae-Mensah, I. , Muriuki, G., Munavu, R. , Lwande, W. , Hassanali, A.(Department of Pharmacy, University of Nairobi, P O Box 19676, Nairobi, Kenya) **Essential oils of Lippia species in Kenya.IV: Maize weevil (Sitophilus zeamais) repellancy and larvicidal activity.** *International Journal of Pharmacognosy*, v. 30(1): p. 9-16, 1992 (18 ref, Eng).

The repellancy of essential oils of eight *Lippia* species on maize weevils was compared with N,N-diethyltoluamide (DEET). The larvicidal activity of these essential oils was also examined. As a repellant, the essential oil of *L.ukambensis*(chemotype camphor) was the most active. Other promising repellants were the essential oils of *L.javanica*, *L.dauensis*, *L.somalensis* and *L.grandifolia*. The essential oil of *L.wilmsii* was the most active as a larvicide. Individual hydrocarbon monoterpene constituents were generally more active than the oxygenated constituents of the essential oils.

9206-3640 Saxena, R.C., Dixit, O.P. , Sukumaran, P.(PG Department of Zoology, SSL Jain College, Vidisha 464001, MP, India) **Laboratory assessment of indigenous plant extracts for anti-juvenile hormone activity in Culex quinquefasciatus.** *Indian Journal of Medical Research*, v. 95A(July): p. 204-206, 1992 (10 ref, Eng).

Of 15 plants tested, five plant extracts showed anti-juvenile hormone-like activity against laboratory colonised late fourth instar larvae and adult female mosquitoes. Petroleum ether extract of *Eichhornia crassipes* and acetone extracts of *Ageratum conyzoides*, *Cleome icosandra*, *Tagetes erecta* and *Tridax procumbens* showed growth inhibitory (P less than 0.001) and juvenile hormone mimicing activity to the treated larvae of *C.quinquefasciatus*. Larval pupal intermediates, demalanised pupae, defective egg rafts and adult with deformed flight muscles were few noticeable changes. Biting behaviour was observed to the affected only in *Ageratum*, *Cleome* and *Tridax* extracts (P less than 0.001). Loss of fecundity was observed in the treated mosquitoes but no sterillant effects could be seen. Adults, obtained from larvae exposed to the plant extracts produced significantly shorter egg-rafts (P less than 0.005) than in control.

9206-3641 Sharma, R.N., Deshpande, S.G. , Sinha, B., Nanda, B. (National Chemical Laboratory, Pune 411 008, Maharashtra, India) **Biochemical analysis of acetone extract of Cassine glauca having antifeedant effect on castor semilooper (Achaea janata).** *Indian Journal of Agricultural Sciences*, v. 62(8): p. 574, 1992 (2 ref, Eng).

Plant extract of *C.glauca* exhibited prominent antifeedant activity. A combination of sitosterol, olenolic acid and armyrin was found responsible for the antifeedant activity shown against an important lepidepterian pest, the castor semilooper.

9206-3642 Zhang, M., Ying, B., Kubo, I.(Division of Entomology and Parasitology, College of Natural Resources, University of California, Berkeley, California 94720 USA) **Nagilactones from Podocarpus nagi and their effects on the feeding and growth of tobacco budworm.** *Journal of Natural Products*, v. 55(8): p.1057-1062 , 1992 (22 ref, Eng).

Eight nagilactones were isolated from different parts of *P.nagi*. The effects of the four most abundant on the feeding and growth of larvae of the tobacco budworm, *Heliothis virescens* were investigated. The growth rate and the pupation of *H.virescens* fed on diets containing nagilactone D were lowered and mortality was occasionally observed. The data strongly suggest that growth inhibition is caused by feeding deterrence of these nor-diterpene dilactones and that nagilactone D is the most potent in inhibiting the mouthpart sensory receptors.

Phytochemistry

9206-3643 Abd El-Fattah, H., Khalil, A.T. , Mansour, E.S., Waight, E.S.(Department of Chemistry, Imperial College of Science and Technology, London, UK) **Triterpenes and triterpene esters from Lactuca saligna.** *International Journal of Pharmacognosy*, v. 30(1): p. 21-26, 1992 (17 ref, Eng).

Investigation on ethanol extract of the aerial parts of *L.saligna* revealed the presence of hexacosan-1-ol, germanicol, psi-taraxasterol and moretenol, as well as their acetate derivatives and fatty acid esters. Identification was performed through physical, chemical and spectroscopic methods.

9206-3644 Abe, F., Yamauchi, T.(Faculty of Pharmaceutical Sciences, Fukuoka University, 8-19-1 Nanakuma, Jonan-ku, Fukuoka 814-01, Japan) **Cardenolide triosides of Oleander leaves.** *Phytochemistry*, v. 31(7): p. 2459-2463, 1992 (19 ref, Eng).

Polar glycosides from the air-dried leaves were re-examined, and gentiobiosyl-nerigoside and gentiobiosyl-beaumontoside isolated along with the major trioside, gentiobiosyl-oleandrin. Minor triosides also include glycosides of 8beta-hydroxy-and delta16-8beta-hydroxy-digitoxigenin, and delta16-neriagenin, along with glycosides of known cardenolides.

9206-3645 Abe, F., Yamauchi, T.(Faculty of Pharmaceutical Sciences, Fukuoka University, Nanakuma, Jonan-ku, Fukuoka 814-01, Japan) **Two pregnanes from oleander leaves.** *Phytochemistry*, v. 31(8): p. 2819-2820, 1992 (5 ref, Eng).

From leaves of *N.indicum*, along with cardenolide glycosides, two minor pregnane glucosides were isolated and the structures elucidated as 3-O-beta-gentiobiosyl-3beta, 14-dihydroxy-5alpha, 14beta-pregnan -20-one and 21-O-beta-D-glucosyl-14, 21-dihydroxy-14beta-pregn-4-ene-3, 20-dione.

9206-3646 Achenbach, H., Waibel, R., Zwanzger, M., Dominguez, X.A. , Espinosa B, G., Verde S, J., Sanchez V, H.(Institute of Pharmacy, University of Erlangen, 8520 Erlangen, Germany) **9-Methoxy- and 7,9-dimethoxytariacuripyrone, natural nitro-compounds with a new basic skeleton from Aristolochia brevipes.** *Journal of Natural Products*, v. 55(7): p. 918-922 , 1992 (12 ref, Eng).

The new natural nitro-compounds, 9-methoxytariacuripyrone and 7,9-dimethoxytariacuripyrone, with the hitherto unknown 5-nitro-2H-benzo{h}chromen-2-one skeleton, were isolated from the rhizomes of *A.brevipes* in addition to aristolochic acid III, aristolochic acid IV methyl ester and aristololactam I. The structures were determined by chemical conversions and spectroscopic methods including HMQC and HMBC nmr.

9206-3647 Ahmad, V.U., Ahmed, W., Usmanghani, K.*(H.E.J.Research Institute of Chemistry, University of Karachi, Karachi 75270, Pakistan) **Triterpenoid saponins from leaves of Castanospermum australe.** *Phytochemistry*, v. 31(8): p. 2805-2807, 1992 (8 ref, Eng).

Leaves of *C.australe* afforded one new and another known triterpenoid saponin as their methyl esters. The structures of these two compounds were elucidated on the basis of chemical and spectral data as 2beta, 23-dihydroxy-3-O-(4-deoxy-beta-L-threo-hex-4-enopyranosiduronic acid) -olean-12-en-28-oic acid dimethyl ester and medicagenic acid 3-O-beta-D-glucoside dimethyl ester.

9206-3648 Ahmad, V.U., Shah, M.G., Noorwala, M., Mohammad, F.V.(H E J Research Institute of Chemistry, University of Karachi, Karachi 75270, Pakistan) **Isolation of 3,3'-dihydroxychalcone from Primula macrophylla.** *Journal of Natural Products*, v. 55(7): p. 956-958 , 1992 (11 ref, Eng).

A new dihydroxy chalcone has been isolated from the EtOAc-soluble portion of the whole plant of *P.macrophylla*, and its structure was determined by spectrosocopic methods, including 2D NMR, as 3,3'-dihydroxychalcone. 3'-Methoxyflavone and beta-sitosterol have also been isolated for the first time from this plant.

9206-3649 Ahmad, V.U., Farooqui, T.A. , Sultana, A., Fizza, K., Khatoon, R.(H.E.J. Research Institute of Chemistry, Universtiy of Karachi, Karachi 75270, Pakistan) **Two sesquiterpenes from Pluchea arguta ref.** (Eng).

Two new sesquiterpenes, 5alpha-hydroxyplucheinol (C15H22O4) and odontinin (C24H31O9) were isolated from the ether-soluble portion of *P.arguta*. Their structures were deduced from spectroscopic studies.

9206-3650 Akhtar, N., Malik, A., Ali, S.N. , Kazmi, S.U.(H.E.J. Research Institute of Chemistry, University of Karachi, 75270, Pakistan) **Proceragenin, An antibacterial cardenolide from Calotropis procera.** *Phytochemistry*, v. 31(8): p. 2821-2824, 1992 (15 ref, Eng).

A new cardenolide, proceragenin, has been isolated from *C.procera*. Its structure was determined as 7beta, 14beta-dihydroxy-5alpha-card-20(22)-enolide through spectroscopic studies including 2D NMR and NOE difference measurement. Its biological screening showed antibacterial activity against both Gram positive and Gram negative bacteria. Proceragenin did not exhibit any antiaggregating activity.

9206-3651 Al-Yahya, M.A., Al-Rehaily, A.J. , Ahmad, M.S., Al-Said, M.S., El-Feraly, F.S.*, Hufford, C.D.(Department of Pharmacognosy, College of Pharmacy, King Saud University, Riyadh 11451, Saudi Arabia) **New alkaloids from Haplophyllum tuberculatum.** *Journal of Natural Products*, v. 55(7): p. 899-903 , 1992 (20 ref, Eng).

Tubactine (C29H37O7N, mp 71.7-72.9), and tubasenecine (C27H39O7N) have been isolated from the aerial parts of *H.tuberculatum* and their identities established from NMR data, including a study of the 2D INADEQUATE spectra of the monoterpene part of tubacetine. In addition, the alkaloid 7-hydroxy-8-(3-methyl-2-butenyl)-4-methoxyfuro{2,3b} quinoline has been identified in this source for the first time.

9206-3652 Ali, A.A., El-Emary, N.A., Khalifa, A.A., Frahm, A.W. (Pharmacognosy Department, Faculty of Pharmacy, Assiut University, Assiut, Egypt) **Guaianolides from Venidium fastuosum.** *Phytochemistry*, v. 31(8): p. 2781-2784, 1992 (13 ref, Eng).

Seven guaianolides have been isolated from the herb *V.fastuosum* four of them are new and are designated as chlorovenidin, C-10/C-14-3-isodeoxyarctolide, 9beta-hydroxy-11beta, 13-dihydrozaluzanin C and chlorovenidol. The other three were identified as arctolide, 3-deacetyl-10,14-deoxy arctolide and 3-deacetyl-11, 13-dihydro-10,14-deoxy arctolide. The structures of the above compounds were establisehd by spectrocopic methods.

9206-3653 Appendino, G., Tagliapietra, S. , Nano, G.M., Cisero, M. (Dipartimento di Scienza e Tecnologia del Farmaco, Via P. Giuria 9, I-10125 Torino, Italy) **A sesquiterpene alcohol from the fruits of Laurus nobilis.** *Phytochemistry*, v. 31(7): p. 2537-2538, 1992 (10 ref, Eng).

Besides known sesquiterpene lactones, the fruits of *L.nobilis* gave a germacrane derivative with a rare oxygenation pattern of the isopropyl side-chain.

9206-3654 Arulmozhi, M., Janardhanan, K.(Seed Physiology Laboratory, Department of Botany, Bharathiar University, Coimbatore 641046, Tamilnadu, India) **The biochemical ocmposition and nutritional potential of the tribal pulse, Mucuna monosperma DC.ex wight.** *Plant Foods for Human Nutrition*, v. 42(1): p. 45-53 , 1992 (43 ref, Eng).

Two germplasms of the tribal pulse *M.monosperma* {I from the Thirunelly Reserve Forest, Coimbatire, T.N.} were analysed for seed proteins, amino acid composition, fatty acids, minerals and anti-nutritional factors. Trypsin inhibitor activity was equal in both germplasms, but it is within limits. Seed protein fraction globulin has been found to exhibit haemagglutinating activity. The antinutritional factors, total free phenols, tannins, lectins and trypsininhibitory activity present in the seeds can be eliminated by heating orcooking as they are heat labile.

9206-3655 Arya, R., Babu, V., Ilyas, M. , Nasim, K.T.(Department of Chemistry, Aligarh Muslim University, Aligarh 202 002, UP, India) **Myricetin-3'-rhamnoside-3-galactoside from Buchanania lanzan (Anacardiaceae).** *Phytochemistry*, v. 31(7): p. 2569-2570, 1992 (9 ref, Eng).

A new glycoside, myricetin 3'-rhamnoside-3-galactoside, has been isolated from leaves of *B.lanzan*. Its structure was established from spectroscopic and chemical evidence.

9206-3656 Atta-ur-Rahman, Malik, S., Zaman, K.(HEJ Research Institute of Chemistry, University of Karachi 75270, Pakistan) **Nigellimine: A new isoquinoline alkaloid from the seeds of Nigella sativa.** *Journal of Natural Products*, v. 55(5): p. 676-678 , 1992 (14 ref, Eng).

Nigellimine (C12H13NO2, mp 118-19 degree C), has been isolated as a trace constituent from the seeds of *N.sativa* and its structure elucidated.

9206-3657 Atta-ur-Rahman, Ali, R.A. , Choudhary, M.I., Sener, B., Turkoz, S.(HEJ Research Institute of Chemistry, University of Karachi, Karachi 75270, Pakistan) **New steroidal alkaloids from rhizomes of Veratrum album.**

Journal of Natural Products, v. 55(5): p. 565-570 , 1992 (14 ref, Eng).

The ethanol extract of the rhizomes of *V.album* afforded two new alkaloids, (+)-jervinone (C27H37NO3, mp 246-48 degree C) and (+)-verabenzoamine (C43H61NO13, mp 181-82 degree). Structures of these alkaloids were determined by spectral analysis.

9206-3658 Atta-ur-Rahman, Asif, E., Ali, S.S. , Nasir, H., Jamal, S.A., Ata, A. , Farooq, A., Choudhary, M.I., Sener, B. , Turkoz, S. (H.E.J. Research Institute of Chemistry, University of Karachi, Karachi 75270, Pakistan) **New steroidal alkaloids from the roots of Buxus papillosa.** *Journal of Natural Products*, v. 55(8): p. 1063-1066 , 1992 (13 ref, Eng).

The roots of *B.papillosa* yielded three new steroidal alkaloids, (+)-papillotrienine (C27H44N2) (+)-Nb-demethylpapillotrienine (C26H42N21), and (+)-Nb-demethylharappamine (C26H42N20). The structures were determined on the basis of spectroscopic studies.

9206-3659 Atta-ur-Rahman, Naz, S., Noor-E-Ain, F., Ali, R.A., Choudhary, M.I., Sener, B. , Turkoz, S.(H.E.J. Research Institute of Chemistry, University of Karachi, Karachi 75270, Pakistan) **Alkaloids from Buxus species.** *Phytochemistry*, v. 31(8): p. 2933-2935, 1992 (8 ref, Eng).

Two new steroidal alkaloids, (-)-16alpha-hydroxybuxaminone (3beta-dimethylamino-16alpha-hydroxy-9,10-secobuxa-9(11), 10(19)-dien-20-one) and (+)-cyclobuxomicreinine (3beta-methyl aminobuxa-5,16-dien-20-one) were isolated from the roots of *B.sempervirens* and the leaves of *B.longifolia*, respectively.

9206-3660 Atta-ur-Rahman, Bhatti, M.K. , Akhtar, F., Choudhary, M.I.(H.E.J. Research Institute of Chemistry, University of Karachi 75270, Pakistan) **Alkaloids of Fumaria indica.** *Phytochemistry*, v. 31(8): p. 2869-2872, 1992 (15 ref, Eng).

Two new alkaloids, papracinine and paprazine, were isolated from the aerial parts of *F.indica*. Their structures were determined by spectral studies. Six more alkaloids isolated for the first time from this plant were identified as fumaritine N-oxide, parfumine, lastourvilline, ferloyl tyramine, fumariflorine and N-methyl corydaldine.

9206-3661 Ayatollahi, S.A.M., Ahmed, Z. , Malik, A.*(H E J Research Institute of Chemistry, University of Karachi, Karachi 75270, Pakistan) **Cycloclarkeanol, a new triterpene from Euphorbia clarkeana.** *Journal of Natural Products*, v. 55(7): p. 959-962 , 1992 (14 ref, Eng).

Phytochemical studies on *E.clarkeana* have resulted in the isolation of cycloartanol, cycloart-23-ene-3beta, 25-diol, 20-acetylingenol-3-decadienoate, and a new cycloartane-type triterpene, cycloclarkanol. Its structure is elucidated as cycloart-22-ene-3beta, 20epsilon, 25-triol on the basis of chemical and spectral studies.

9206-3662 Balasubrahmanyam, V.R., Rawat, A.K.S.(National Botanical Research Institute, Lucknow, U P, India) **Flavour characteristics of Piper betle L..** *Journal of Spices and Aromatic Crops*, v. 1(1): p. 30-42 , 1992 (5 ref, Eng).

The chemical analysis of essential oil of betel leaves is reviewed. The results of the gas chromatography and mass spectrometry (GCMS) of the oil of all the five recognized varieties of *P.betle* are discussed. The yield and composition of essential oil of betel leaves have been influenced by age and position of the leaf on the stem, season of harvest, potassium nutrition etc. Promoting the use of this important essential oil in flavour industry and confectioneries is suggested.

9206-3663 Bandara, B.M.R., Savitri Kumar, N. , Wimalasiri, K.M.S. (Department of Chemistry, University of Peradeniya, Peradeniya, Sri Lanka) **Constituents of the stem bark from Butea monosperma (Leguminosae).** *Journal of National Science Council of Sri Lanka*, v. 18(2): p. 97-103, 1990 (15 ref, Eng).

The antifungal compound isolated from the petroleum and ethyl acetate extracts of the stem bark from *B.monosperma* was identified as (-)-3-hydroxy-9-methoxypterocarpan {(-)-medicarpin. Both (-)-medicarpin and its acetate were active against *Cladosporium cladosporioides*. The petroleum extract also yielded lupenone , lupeol and sitosterol. Two isoflavones isolated from the ethyl acetate extract were found to be 5-methoxygenistein and prunetin.

9206-3664 Bhakuni, R.S., Shukla, Y.N., Thakur, R.(Central Institute of Medicinal and Aromatic Plants, Lucknow 226016, UP, India) **Flavonoids and other constituents from Pedalium murex.** *Phytochemistry*, v. 31(8): p. 2917-2918, 1992 (9 ref, Eng).

Two new compounds isolated from the fruits of *P.murex* were characterized as 2',4',5'-trihydroxy-5,7-dimethoxyflavone and triacontanyl dotriacontanoate by physico-chemical methods. Luteolin, rubusic acid, monacosane, tritriacontane, triacontanoic acid, tritriacontanoic acid and sitoterol-beta-D-glucoside were also isolated and identified.

9206-3665 Bhattacharyya, J., Cunha, E.V.L.(Laboratorio de Tecnologia Farmaceutica, Universidade Federal da

Paraiba, 58.059-Joao Pessoa, PB, Brazil) **A triterpenoid from the root-bark of Chiococca alba.** *Phytochemistry*, v. 31(7): p. 2546-2547, 1992 (9 ref, Eng).

A new triterpenoid with an oleanolic acid skeleton was isolated from the root-bark of *C.alba* and identified as 3beta-hydroxyolean-12,15-dien-28-oic acid.

9206-3666 Buchbauer, G., Jirovetz, L.(Institut fur Pharmazeutische Chemie, A-1090 Wien, Wahringer Strasse 10 Austria) **(Lime tree essential oil- analysis of aroma substances).** *Deutsche Apotheker Zeitung*, v. 132(15): p. 748-750 , 1992 (26 ref, Ger).

Seventy components isolated from the essential oils of *Tilia cordata* and *T.platyphyllos* have been identified.

9206-3667 Chan, W.R., Sheppard, V., Medford, K.A., Tinto, W.F., Reynolds, W.F., McLean, S.(Department of Chemistry, University of Toronto, Toronto M5S 1A1, Canada) **Triterpenes from Miconia stenostachya.** *Journal of Natural Products*, v. 55(7): p. 963-966 , 1992 (4 ref, Eng).

Sumaresinolic acid and 3-epi-sumaresinolic acid, a new natural product, have been isolated from *M.stenostachya* leaves. The 13C and 1H chemical shifts of these compounds and a number of their derivatives have been assigned from 2D NMR spectra in which the FLOCK pulse sequence was used to establish 2-and 3-bond 1H-13C connectivities.

9206-3668 Chawla, A.S., Kaith, B.S., Handa, S.S., Kulshreshtha, D.K.(Department of Pharmaceutical Sciences, Punjab University, Chandigarh 160014, India) **Chemical investigation of Pluchea lanceolata flowers.** *Indian Journal of Pharmaceutical Sciences*, v. 54(2): p. 51-54, 1992 (10 ref, Eng).

Petroleum extract of *P.lanceolata* flowers yielded moretenol acetate and moretenol. The chloroform-soluble portion of the methanolic extract afforded neolupenol and cycloart-23-ene-3 beta, 25-diol, the latter being reported for the first time from the genus.

9206-3669 Cheng Chunquan, Wu Dagang, Liu Jikai(Department of Chemistry, Zhongshan University, Guangzhou 510275, People's Republic of China) **Angulatueoids A-D, four sesquiterpenes from the seeds of Celastrus angulatus.** *Phytochemistry*, v. 31(8): p. 2777-2780, 1992 (8 ref, Eng).

Four new sesquiterpenes, angulatueoids A-D, have been isolated from the seeds of *C.angulatus*. The structures were established by spectroscopic means, including an X-ray diffraction analysis of angulatueoid A (C34H39NO11, mp 227-30 degree C).

9206-3670 Chi, Y.M., Yan, W.M., Chen, D.C. , Noguchi, H., Iitaka, Y., Sankawa, U.(Faculty of Pharmacy, Box 31, Beijing College of Traditional Chinese Medicine, Beijing 100029, People's of China) **A monoterpene alkaloids from Incarvillea sinensis.** *Phytochemistry*, v. 31(8): p. 2930-2932, 1992 (3 ref, Eng).

A new alkaloid, incarvilline, was isolated from the aerial part of *I.sinensis*. By analysis of the IR mass, 1H and 13C 2D NMR spectra and X-ray crystallography, the structure was determined to be N-methyl-4,8-dimethyl-7-hydroxy-cyclopenta (C) piperidine-(7beta, 4R,8R).

9206-3671 Coskun, M.(Ankara University, Faculty of Pharmacy, Tandogam 06100, Ankara, Turkey) **HPLC analysis of the anthraquinones from Rhamnus species growing in Turkey.** *International Journal of Pharmacognosy*, v. 30(2): p. 151-156, 1992 (6 ref, Eng).

The main anthraquinones from the bark of four species of *Rhamnus* (*R.petiolaris, R.kurdicus, R.hirtellus, R.punctatus*) were separated with RP-HPLC. The external standard method was used for quantitative determination of anthraquinones.

9206-3672 De Tommasi, N., Aquino, R., De Simone, F., Pizza, C. (Dipartimento di Chimica delle Sostanze Naturali, Universita degli Studi di Napoli, nvia D. Monstesano 49,80131, Napoli, Italy) **Plant metabolites, new sesquiterpene and ionone glycosides from Eriobotrya japonica.** *Journal of Natural Products*, v. 55(8): p. 1025-1032 , 1992 (15 ref, Eng).

Isolation of seven glycosides, four of which are new natural products, from *E.japonica* collected in Southern Italy has been reported. New compounds are sesquiterpene glycosides. Other compounds were characterized as ionone-derived glycosides by chemical and spectral methods.

9206-3673 De Tommasi, N., De Simone, F. , Pizza, C., Mahmood, N., Moore, P.S. , Conti, C., Orsi, N., Stein, M.L.(Dipartimento di Chimica delle Sostanze Naturali, Universita degli Studi di Napoli, via D.Montesano 49,80131, Napoli, Italy) **Constituents of Eriobotrya japonica. A study of their antiviral properties.** *Journal of Natural Products*, v. 55(8): p. 1067-1073 , 1992 (25 ref, Eng).

E.japonica leaf extract from an Italian source was shown to contain four new triterpene esters, namely, 23-trans-p-coumaroyltormentic acid, 23-cis-p-coumaroyltormentic acid, 3-O-trans-caffeoyltormentic acid, and 3-O-trans-p-coumaroyl-rotundic acid, in addition to three common ursolic acid derivatives. An investigation of the antiviral properties of these compounds revealed that only. 3,O-trans-cacceoyltormenticacid significantly reduced rhinovirus infection. The compounds were ineffective towards human immunodeficiency virus type 1 (HIV-1) and Sindbis virus replication.

9206-3674 Dominguez, X.A., Espinoza, B.G. , Rombold, C., Utz, W., Achenbach, M.*(Institute of Pharmacy and Food Chemistry, Department of Pharmaceutical Chemistry, University of Erlangen, D(W)-8520 Erlangen, FRG) **Neolignans, norneolignans, and other compounds from Krameria sonorae.** *Planta Medica*, v. 58(4): p. 382-383, 1992 (15 ref, Eng).

Repeated chromatography of the CH2 NCl2-extract afforded 16 constituents. Canocarpan was the major constituent. All the compounds were identified by spectrocopic analysis and by comparison with authentic samples. Some of the compounds showed antibiotic activity. Which validates the use of roots as a folk medicine.

9206-3675 Drewes, S.E., Taylor, C.W. , Cunningham, A.B., Ferreira, D., Steenkamp, J.A., Mouton, C.H.L.(Department of Chemistry, University of Natal, P.O.Box 375, Pietermaritzburg 3200, South Africa) **Epiafzelechin-(4beta-8, 2beta-O-7)-ent-afzelechin from Cassipourea gerrardii.** *Phytochemistry*, v. 31(7): p. 2491-2494, 1992 (13 ref, Eng).

A new A-type proanthocyanidin has been isolated from the bark of *Cassipourea gerrardii*. Its structure has been established from spectroscopic studies as epiafzelechin- (4beta-8, 2beta-O-7)-ent-afzelechin.

9206-3676 Ekundayo, O., Ajaiyeoba, E. , Aiyelaagbe, O., Stahl Biskup, E.(Department of Chemistry, University of Ibadan, Ibadan, Nigeria) **Volatile oil constituents of Dennettia tripetala.** *Planta Medica*, v. 58(4): p. 386-387, 1992 (9 ref, Eng).

A total of eleven constituents were isolated from the essential oil obtained from the fresh fruits of *D.tripetala*. The major constituent was beta-phenylnitroethane (68.38 percent), followed by linalool (15.83 percent) and nerolidol (8.50 percent).

9206-3677 Ezer, N., Sakar, M.K., Rodriguez, B., de la Torre, M.C. (Department of Pharmacognosy, Faculty of Pharmacy, University of Hacettepe, 06100 Ankara, Turkey) **Flavonoid glycosides and a phenylpropanoid glycoside from Sideritis perfoliata.** *International Journal of pharmacognosy*, v. 30(1): p. 61-65, 1992 (13 ref, Eng).

From the aerial parts of *S.perfoliata* three flavonoid glycosides and a phenylpropanoid glycoside were isolated and identified as 4'-O-methylisoscutellarein-7-O-(2"-O-6'''-O-acetyl-beta-D-allopyranosy l)-beta-D-glucopyranoside, 3'-hydroxy-4'-O-methylisoscutellarein-7-O-(2"-O-6-'''-O-acetyl-beta-D- allopyranosyl)-beta-D-glucopyranoside, apigenin-7-O-(4"-O-p-coumaroyl) -beta-D-glucopyranoside and acteoside.

9206-3678 Fullas, F., Soejarto, D.D. , Kinghorn, A.D.(Program for Collaborative Research in the Pharmaceutical Sciences, College of Pharmacy, University of Illinois at Chicago, Chicago, IL 60612, USA) **A bitter-tasting trihomolabdane arabinoside from Baccharis gaudichaudiana.** *Phytochemistry*, v. 31(7): p. 2543-2545, 1992 (9 ref, Eng).

Investigation of the aerial parts of *B.gaudichadiana* has afforded a new labdane arabinoside with a novel 23-carbon aglycone skeleton. The structure of this bitter compound, gaudichaudioside F, was established by analysis of its spectoscopic parameters.

9206-3679 Goh, S.H., Jantan, I.(Chemistry Department, University of Malaya, 59100 Kuala Lumpur, Malaysia) **Aporphine alkaloids of Aromadendron elegans.** *Phytochemistry*, v. 31(7): p. 2495-2498, 1992 (19 ref, Eng).

A new alkaloid, 1-(N-acetyl-N-methylamino)ethyl-3,4,6-trimethoxy-7-hydroxyphenanthrene, has been isolated from the heartwood of *A.elegans*.

9206-3680 Gonzalez, A.G., Aguiar, Z.E., Luis, J.G., Rivera, A., Calle, J., Gallo, G.(Centro de Productos Naturales Organicos Antonio Gonzalez, Universidad de La Laguna, Carretera La Esperanza 2, La Laguna, 38206 Tenerife, Canary Islands, Spain) **A C-methyl chalcone from Dalea caerullea.** *Phytochemistry*, v. 31(7): p. 2565-2566, 1992 (5 ref, Eng).

A petrol extract of *Dalea carerullea* yielded the new 4',6'-dihydroxy-3'-5'-dimethyl-2'-methoxychalcone which was characterized by spectroscopy. Mono-and sesquiterpenes were also obtained from extracts of this plant.

9206-3681 Gopalakrishnan, M.(Regional Research Laboratory, CSIR, Trivandrum 695 019, Kerala, India) **Chemical composition of nutmeg and mace.** *Journal of Spices and Aromatic Crops*, v. 1(1): p. 49-54 , 1992 (19 ref, Eng).

The proximate analysis of nutmeg *Myristica fragrans* and mace, unlike in most earlier reports, has been carried out using the raw spices. The major hallucinogenic principle in Indian nutmeg/mace oils appears to be myristicin which is present in good amount. GC profiles of the oils compared very well with reports in literature. The rind of the nutmeg fruit contain good quality pectin upto 14 percent.

2906-3682 Govindachari, T.R., Sandhya, G. , Raj, S.P.G.(Centre for Agrochemical Research, SPIÇ Science Foundation , 110 Mount Road, Guindy, Madras 600 032, TN, India) **Azadirachtins H and I: Two new tetranortriterpenoids from Azadirachta indica.** *Journal of Natural Products*, v. 55(5): p. 596-601 , 1992 (11 ref, Eng).

Two new tetranortriterpenoids, azadirachtin h ($C33H42O14.2H2O$, mp 248 degree) and azadirachtin I ($C32H42O12.2H2O$, mp 191 degree) have been isolated from the seed kernels and their structures elucidated by spectral analysis.

9206-3683 Grande, M., Bellido, I.S., Torres, P., Piera, F. (Departmento de Quimica Organica, Facultad de C.Quimicas, Universidad de Salamanca, Plaza de Los Caidos 1-5, 37008 Salamanca, Spain) **9-Hydroxynerolidol esters and bicyclic sesquiterpenoids from Dittrichia viscosa.** *Journal of Natural Products*, v. 55(8): p. 1074-1079 1992 (23 ref, Eng).

The following five new sesquiterpenoids were identified from *D.viscosa*, 9-isobutyroxynerolidol, 9-isovaleroyloxynerolidol, 9-(2-methyl-butyroxy)-nerolidol, 11-methoxy-3,7,11-trimethyldodeca-1,6,9-trien-3-ol, and 2,5-peroxyeudesma-3, 11(13)-dien-12-oic acid. Some known nerolidol derivatives, eudesmane sesquiterpenoids, triterpenoids, and aromatic derivatives were also isolated.

9206-3684 Gray, A.I., Rasheed, M.A., Waterman, P.G.* (Phytochemistry Research Laboratries, Department of Pharmaceutical Sciences, University of Strathclyde, GlasgowG1 1XW, Scotland, UK) **NMR Assignments for the pentacyclic coumarins bruceol and deoxybruceol.** *Journal of Natural Products*, v. 55(5): p. 681-684 , 1992 (6 ref, Eng).

Bruceol and deoxybruceol have been isolated from *Eriostemon brucei* and identified. Full and unambiguous assignments are reported for the 1H- and 13C-NMR spectra of these compounds.

9206-3685 Gupta, M., Manickam, M., Sinha, S.C. , Sinha-Bagchi, A., Ray, A.B.(Department of Medicinal Chemistry, I.M.S. Banaras Hindu University, Varanasi 221005, UP, India) **Withanolides of Datura metel.** *Phytochemistry*, v. 31(7): p. 2423-2425, 1992 (14 ref, Eng).

The leaves of *D.metel* yielded three new withanolides in addition to lycium substance B. previously reported from other Datura species. The structures of the withanolides, clarified by comprehensive spectral analysis, showed features of typical daturalactones as well as of the withanolides of *D.metel*. p-Hydroxy cinnamic acid amide of tyramine was also isolated.

9206-3686 Gupta, S., Ali, M., Alam, M.S. , Niwa, M., Sakai, T. (Faculty of Pharmacy, Faculty of Science, Jamia hamdard, Hamdard University, Hamdard Nagar, New Delhi 110 062, India) **24beta-Ethylcholest-4-en-3beta-ol from the roots of Lawsonia inermis.** *Phytochemistry*, v. 31(7): p. 2558-2560, 1992 (17 ref, Eng).

A new sterol, namely lawsaritol, has been isolated from the roots of *L.inermis*(Syn *L.alba*). Its structure has been elucidated as 24beta-ethylcholest-4-en-3beta-ol on the basis of spectral analysis and chemical reactions.

9206-3687 Haraguchi, H., Hashimoto, K., Yagi, A.(Faculty of Engineering and Faculty of Pharmacy and Pharmaceutical Sciences, Fukuyama University, Higashimura-cho, Fukuyama 729-02, Japan) **Antioxidative substances in leaves of Polygonum hydropiper.** *Journal of Agricultural and Food Chemistry*, v. 40(8): p. 1349-1351, 1992 (24 ref, Eng).

Antioxidative flavonoids and flavonoid glucoside were isolated from the leaves of *P.hydropiper* , a culinary herb and identified as 7,4"-dimethylquercetin, as 3'-methylquercetin, quercetin, and as iosquercitrin on the basis of chemical and spectroscopic evidence. The antioxdiative activities was measured by a ferric thiocyanate method..

9206-3688 Hashimoto, K., Katsuhara, T. , Niitsu, K., Ikeya, Y., Okada, M. , Mitsuhashi, H.(Research Institute for Biology and Chemistry, 3586 Yoshiwara, Ami-machi, Inashiki-gun, Ibaraki 300-11, Japan) **Two glycosides from roots of Asiasarum sieboldi.** *Phytochemistry*, v. 31(7): p. 2477-2480, 1992 (5 ref, Eng).

Two new glycosides, 1-O-feruloyl-beta-D-xylopyranosyl-(1-6)-beta-D-glucopyranoside and 1-O-p-coumaroyl-beta-D-xylopyranosyl-(1-6)-beta-D-gl ucopyranoside together with four knwon glycosides have been isolated from the roots of *A.siebolidi*. The structures of new compounds have been established on the basis of physiochemical and spectral analyses.

9206-3689 He, L., Pan, X.(Department of Pharmacy, Lanzhou Medical College Lanzhou 730000, People's republic of China) **Triterpenoids and steroids from Aster poliothamnus.** *Planta Medica*, v. 58(4): p. 388, 1992 (4 ref, Eng).

Isolation of five triterpenes viz., alpha-amyrin friedelin, erythrodiol, shionone, and epishionol along with alpha-spinasterol, alpha-spinasterol-beta-D-glucopyranoside from the aerial parts of *A.poliothamnus* has been reported. Their structures were elucidated by spectral anylyses.

9206-3690 Hrochova, V., Kostalova, D.(Katedra farmakognosie a botaniky Farmaceutichej fakulty University Komenskeho, Partizanska 11, 81103 Bratislawa, Czechoslovakia) **Alkaloids of the underground parts of Berberis koreana Palib.** *Ceskoslovenska Farmacie*, v. 41(2): p. 37-39, 1992 (17 ref, Cze, Eng).

Berbamine, oxycanthine, aromoline, obamegine, berberine, palmatine, magnoflorine, isotetrandrine, obaberine, columbanine and jatrorhizine, have been isolated from the underground parts of *B.koreana* and identified.

9206-3691 Hu, B.H., Zhou, L.D., Liu, Y.L.(Institute of Medicinal Plant Development, Chinese Academy of Medical Sciences, Beijing 100094, People's Republic of China) **New tetrasaccharide flavonol glycoside from Epimedium acuminatum.** *Journal of Natural Products*, v. 55(5): p. 672-675 , 1992 (5 ref, Eng).

A new tetrasaccharide flavonol glycoside has been isolated from the aerial parts of *E.acuminatum*, along with three known flavonoids. The structure of the new compound, named acuminatoside, has been established to be anhydroicaritin-3-O-alpha-L-rhamnopyranosyl (1-2)-alpha-L-rhamnopyranoside-7-O-beta-D-glucopyranosyl (1-2)-beta-D-glucopyranoside by means of spectroscopic techniques and chemical methods. The known compounds are icariin, epimedoside A, and kaempferitin.

9206-3692 Huber, U.A.(Givaudan-Roure Research Ltd., Uberlandstrasse 138, ch-8600 Dubendorf, Switzerland) **Homofuronol: A powerful tool to prepare and improve sophisticated high quality flavors.** *Perfumer & Flavorist*, v. 17(4): p. 15-19, 1992 (38 ref, Eng).

History, application (in flavors and fragrances), analytical methods and toxicology, biosynthesis, purity and stability, tautomeric equilibrium, reactivity and decomposition, and synthesis of homofuronol belonging to same family as maltol and furonol, and found in coffee, shoyn (=fermented soy hydrolysate) and melon have been reviewed.

9206-3693 Inose, Y., Miyase, T., Ueno, A.(School of Pharmaceutical Sciences, University of Shizuoka, 51-1, Yada, Shizuoka 422, Japan) **Studies on the constituents of Solidago virga-aurea L. II. Structures of solidagosaponins X-XX.** *Chemical & Pharmaceutical Bulletin*, v. 40(4): p. 946-953 , 1992 (7 ref, Eng).

After further investigation of more polar fractions of *S.virga-aurea*, eleven new oleanane-type saponins named-solidagosaponins , were isolated, together with two known saponins, virgaureasaponin and bellissaponin. These new saponins contain various acyl groups, and four of them were tridesmosidic glycosides. Their structures were established on the basis of spectroscopic and chemical evidence.

9206-3694 Itokawa, H., Kishi, E., Morita, H. , Takeya, K. (Department of Pharmacognosy, Tokyo College of Pharmacy, Horinouchi 1432-1, Hachioji, Tokyo 192-03, Japan) **Cytotoxic quassinoids and tirucallane-type triterpenes from the woods of Eurycoma longifolia.** *Chemical & Pharmaceutical Bulletin*, v. 40(4): p. 1053-1055, 1992 (16 ref, Eng).

Cytotoxic quassinoids viz. 6 alpha-hydroxy eurycomalactone, longifolene and 14,15beta-dihydroxyklaineanone were isolated from the wood of *E.longifolia* with three cytotoxic quassinoids, 11-dehydroklaineanone, eurycomalactone and 5,6-dehydrotype triterpenes. All of them showed potent cytotoxic activity against P388 and KB cells.

9206-3695 Jash, S.S., Biswas, G.K. , Bhattacharyya, S.K., Bhattacharyya, P. , Chakraborty, A., Chowdhury, B.K.(Department of Chemistry, Bose Institute, 93/1, A.P.C. Road, Calcutta 700009, India) **Carbazole alkaloids from Glycosmis pentaphylla.** *Phytochemistry*, v. 31(7): p. 2503-2505, 1992 (7 ref, Eng).

Three carbazol alkaloids, glycozolicine, 3-formyl caurbazole and glycosinine, have been isolated from the roots of *G.pentaphylla*. The structures of glycozolicine and glycosinine have been established as 5-methoxy-3-methyl carbazole and 2-methoxy-3-formyl carbazole, respectively, from physical and chemical evidence, and synthesis.

9206-3696 Jia, Z., Zhao, Y., Tan, R.(State Key Laboratory of Applied Organic Chemistry at Lanzhou University, Lanzhou 73000, People's Republic of China) **New eremophilane type lactones from the roots of Ligularia veitchiana.** *Planta Medica*, v. 58(4): p. 365-367, 1992 (6 ref, Eng).

The roots of *L.veitchiana* afforded two new eremophilanolides, beta-sitosterol, stigmasterol, taraxol, and liguhodgsonal, whose structure was confirmed by the 13C-NMR techniques. The structures of the new eremophilanolies were elucidated by spectroscopic methods and shown to be 1beta, 10beta-epoxy-6beta-(2'-hydroxymethylacryloyloxy)-8-beta-hydroxy-eremop hila-7(11)-en-12, 8alpha-olide and 1beta, 10beta-epoxy-6beta-(2'-hydroxymethylacryloyloxy)-8beta-ethoxy-ere mophi la-7(11)-en-12, 8apha-olide.

9206-3697 Jia-Sen, L., Mei-Fen, H., Hong-Xing, Z.(Shanghai Institute of Materia Medica, Academia Sinica, 319, Yueyang Road, Shanghai) **Kadsulignan C and D, two novel lignans from Kadsura longipedunculata.** *Canadian Journal of Chemistry*, v. 69(9): p. 1403-1407 , 1991 (8 ref, Eng).

Two novel lignans, Kadsulignan C and D were isolated from the root bark of *K. longipedunculata* their structures including, absolute configurations were elucidated.

9206-3698 Kakuno, T., Yoshikawa, K., Arihara, S.*(Faculty of Pharmaceutical Sciences, Tokushima-Bunri University, Tokushimashi, Tokushima 770, Japan) **Triterpene saponins from fruit of Ilex crenata.** *Phytochemistry*, v. 31(8): p. 2809-2812, 1992 (6 ref, Eng).

From the fresh fruits of *I.crenata* have been isolated six new saponins named ilexosides III-VIII, respectively, along with the known saponin, ilexoside II. Their structures were established on the basis of spectral and chemical evidence.

9206-3699 Kalidhar, S.B.(Department of Chemistry and Biochemistry, Haryana Agricultural University, Hisar 125004, Haryana, India) **Reassessment of the structrue of an anthraquinone glycoside from Rhamnus formosana.** *Phytochemistry*, v. 31(8): p. 2905-2906, 1992 (4 ref, Eng).

The structure of an anthraquinone glycoside isolated from *R.formosana* has been reinterpreted to be emodin 8-O-rhamnosyl-(1-2)-glucoside.

9206-3700 Kam, T.S., Tan, P.S., Chuah, C.H.(Department of Chemistry and Institute of Advanced Studies, University of Malaya, 59100 Kuala Lumpur, Malaysia) **Alkaloids from leaves of Kopsia larutensis .** *Phytochemistry*, v. 31(8): p. 2936-2938, 1992 (9 ref, Eng).

Five alkaloids of the eburnan type viz., (+), eburnamonine N (4)-oxide, (-)-eburnamine, (+)-isoeburnamine and larutenine were isolated from the leaves of *Kopsia larutensis*. Larutenine is a new alkaloid, while (+)-eburnamonine N(4)-oxide was isolated as a natural product for the first time. The structures of these alkaloids were assigned by spectral methods.

9206-3701 Kamal-Eldin, A., Yousif, G.(Department of Food Hygiene, Swedish University of Agricultural Sciences, Box 7009, S-75007 Uppsala, Sweden) **A furofuran lignan from Sesamum alatum.** *Phytochemistry*, v. 31(8): p. 2911-2912, 1992 (11 ref, Eng).

A new sesamin-type furofuran lignan, 2-episesalatin, was isolated from the seeds of *S.alatum*. Its structure was established as 2-epi-(3,4,5-trimethoxyphenyl)-6-(3,4-methyenedioxy-5-methoxy phenyl)-cis-3,7-dioxa-bicyclo *3.3.0* octane by spectroscopic methods.

9206-3702 Kaneda, N., Lee, I.S., Gupta, M.P. , Soejarto, D.D., Kinghorn, A.D.(Program for Collaborative Research in the Pharmaceutical Sciences, Department of Medicinal Chemistry and Pharmacognosy, College of Pharmacy, University of Illinois at Chicago, Chicago, illinois 60612, USA) **(+)-4beta-Hydroxyhernandulcin, new sweet sesquiterpene from the leaves and flowers of Lippia dulcis.** *Journal of Natural Products*, v. 55(8): p. 1136-1141 , 1992 (24 ref, Eng).

From the leaves and flowers of *L.dulcis* collected in Panama, a new sweet sesquiterpene identified as (+)-4beta-hydroxyheranandulcin (C15H24O3) was isolated, accompanied by (+)-hernandulcin, (-)-epihernandulcin and 6-methyl-5-hepten-2-one. Acteoside (verbascoside), a known bitter phenylpropanoid glycoside, was isolated from the flowers of *L.dulcis*. The structure of (+)-4beta-hydroxyhernandulcin was established by interpretation of its spectral data.

9206-3703 Kanyinda, B., Vanhaelen-Fastre, R. , Vanhaelen, M.*, Ottinger, R.(Department of Pharmacognosy and Bromatology, U.L.B., CP 205/4, Boulevard du Triomphe, B-1050 Bruxelles, Belgium) **Identification by two-dimensional NMR spectroscopy of two new benzylisoquinoline alkaloids from leaves of Anisocycla cymosa.** *Journal of Natural Products*, v. 55(5): p. 607-612 , 1992 (20 ref, Eng).

Two new N-methyltetrahydroproto (-)-N-methylthaicanine have been isolated from *A.cymosa* leaves together with four other known alkaloids: (-)-N-methyltetrahydropalmatine, anisocycline, palmatine, and stephenanthrine. Their structures and stereochemistry have been determined by chemical and spectroscopic analysis.

9206-3704 Kelley, R.B., Seiber, J.N.(Department of Environmental Toxicology, University of California, Davis, CA 95616, USA) **Pyrrolizidine alkaloids from Amsinckia.** *Phytochemistry*, v. 31(7): p. 2513-18, 1992 (33 ref, Eng).

In conjunction with a chemosystematic analysis of the genus *Amsinckia*, the novel pyrrolizidine alkaloids tessellatine and 3',7-diacetylintermedine were isolated and structurally elucidated by chromatograhic (GC and TLC) and spectroscopic (mass, and 1H and 13C NMR) experiments. The 1H and 13C NMR spectra of viridiflorine are also discussed in detail.

9206-3705 Khan, M.S.Y., Bhatia, S., Javed, K. , Khan, M.H. (Department of Pharmaceutical Chemistry, Jamia Hamdard, Hamdard Nagar, New Delhi 110062, India) **Chemical constituents of the leaves of Luffa cylindrica**

Linn. *Indian Journal of Pharmaceutical Sciences*, v. 54(2): p. 75-76, 1992 (3 ref, Eng).

Machaerinic acid lactone, its acetate and apigenin were isolated from *L.cylindrica* leaves. Occurrence of a triterpene lactone from family cucurbitaceae has been reported for the first time.

9206-3706 Khetwal, K.S., Pathak, R.P. , Vashisht, A., Pant, N.(Department of Chemistry, Kumaon University, Nainital 263 002, UP, India) **Constituents of high altitude Himalayan herbs, Part V. A new diterpenoid quinone from Salvia hians.** *Journal of Natural Products*, v. 55(7): p. 947-949 , 1992 (4 ref, Eng).

A new red-colored ortho diterpenoid quinone, 3alpha, 17-dihydroxytanshinone II, along with two known compounds transhinone II and beta-sitosterol, has been isolated from the roots of *S.hians* and identified by UV, IR, 1H-NMR, and mass spectral methods.

9206-3707 Kim, S.H., Kang, S.S., Kim, C.M.(College of Pharmacy, Kangweon National University, Chuncheon 220-701, Korea) **Coumarin glycosides from the roots of Angelica dahurica.** *Archives of Pharmacal Research*, v. 15(1): p. 73-77 , 1992 (27 ref, Eng).

From *A.dahurica* roots, five known coumarin glucosides together with adenosine were isolated and identified as nodakenin, 3'-hydroxymarmesinine, tert-O-beta-D-glucopyranosyl-byakangelicin, sec.-O-beta-D-glucopyranosyl-byakangelicin and scopolin. This is the first report of the occurrence of these compounds in this plant.

9206-3708 Kinoshita, K., Koyama, K. , Takahashi, K.*(Department of Pharmacognosy and Phytochemistry, Meiji College of Pharmacy, 1-22-1 Yato-Cho, Tanashi City, Tokyo 188, Japan) **New triterpenes from Trichocereus bridgesii.** *Journal of Natural Products*, v. 55(7): p. 953-955 , 1992 (6 ref, Eng).

Two known triterpenes, lupeol and lupenone, were isolated from *Hertrichocereus beneckei* as the wax constituents, and two new triterpenes, bridgesigenin A and bridgesigenin B, were isolated from *T.bridgesii*.

9206-3709 Konda, Y., Toda, Y., Takayanagi, H. , Ogura, H., Harigaya, Y., Lou, H. , Li, X., Onda, M.(School of Pharmaceutical Sciences, Kitasato University, Minato-ku, Tokyo, Japan) **A new modified steroid, hancopregnane, and a new monoterpene from Cynanchum hancockianum.** *Journal of Natural Products*, v. 55(8): p. 1118-1123 , 1992 (13 ref, Eng).

A new modified steroid, hancopregnane (NC21H28o7; mp 202-203 degree C) and a new monoterpene (C10H20O3; mp 149-51 degree C) were isolated from *C.hancockianum* along with a number of known compounds. Their structures were elucidated by means of spectroscopic analysis.

9206-3710 Kopp, B., Bauer, W.P. , Bernkop-schnurch, A.(Institute of Pharmacognosy, University of Vienna, Wahringerstrasse 25, A-1090, Vienna, Austria) **Analysis of some Malaysian dart poisons.** *Journal of Ethnopharmacology*, v. 36(1): p. 57-62 , 1992 (25 ref, Eng).

An investigation of nine Malaysian dart poisons has confirmed that their main active components are cardenolides from *Antiaris toxicaria* and alkaloids probably from different forms of *Strychnos ignatii*. It is not possible to determine the ethnic origin of the poison from the results of the analyses on their own. Two new cardiac glycosides have been isolated and their structures determined as 12, beta-hydroxycannogenin 3. beta-O-beta-D-deoxygulopyranoside and 3beta-O-alpha-L-rhamnopyranofide respectively.

9206-3711 Koyama, J., Ogura, T., Tagahara, K. , Konoshima, T., Kozuka, M.(Kobe Women's College of Pharmacy, Kobe 658, Japan) **Two naphthoquinones from Rubia cordifolia.** *Phytochemistry*, v. 31(8): p. 2907-2908, 1992 (9 ref, Eng).

The methanol extract of *R.cordifolia* roots afforded two new naphthoquinones, 2-carbamoyl=-2-caurbomyl-3-methoxy-1,4-napthoquinone and 2-carbamoyl-3-hydroxy-1,4-naphthoquinone, isolated along with a known napthoquinone and naphthohydroquinone and six known anthraquinones. The structures of the new compounds were determined on the basis of spectroscopic data.

9206-3712 Kulkarni, A.S., Khotpal, R.R., Saha, S.K., Bhakare, H.A. (Department of Oil Technology, Laxminarayan Institute of Technology, Nagpur University, Nagpur 440 010, Maharashtra, India) **Fatty acid distribution of lipids of some plant seeds of Vidarbha region.** *Indian Journal of Pharmaceutical Sciences*, v. 54(3): p. 105-107, 1992 (15 ref, Eng).

Fatty acid distribution in total lipids, phopholipids and glycolipids of *Datura stramonium, Pithecolobium dulse* and *Saraca indica* seeds was found to be mainly palmitic, stearic, oleic and linoleic acids besides small quantities of myristic, linolenic and arachidic acids.

9206-3713 Kumar, R., Bhan, S., Kalla, A.K. , Dhar, K.L. (G.M.College, Srinagar, Kashmir, India) **28-Noroleana-16, 21-diene triterpenes from Phlomis spectabilis.** *Phytochemistry*, v. 31(8): p. 2797-2799, 1992 (14 ref, Eng).

Two new nortriterpenes have been isolated from *P.spectabilis* and characterised as 28-noroleana-16,21-diene-3alpah, 19alpah, 23, 29-tetrol and 28-noroleana-16, 21-diene-3alpha, 19alpha, 29-triol-23-al.

9206-3714 Kusano, G., Abe, M., Koike, Y. , Uchida, M., Nozoe, S., Taira, Z.(Osaka University of Pharmaceutical Sciences, 2-10-65, Kawai Matsubara-City, Osaka 580, Japan) **Studies on the constituents of Chloranthes spp. followed studies on the constituents of Chloranthes japonicus.** *Yakugaku Zasshi*, v. 111(12): p. 756-764, 1991 (8 ref, Jap).

A new sesquiterpenic ketoacid, chloranthalic acid (C15H22Oy; mp 213-14 degree) was isolated from *C.japonicus* roots and characterised as selin-4-alpha-hydroxy-7(11)-en-8-oxo-12-oic acid. Two new sesquiterpenic dimers, methyl chloranthadimeric acid acetate and chloranthalactone A were also obtained. Chloranthalactone B was elucidated to be derived from chloranthalactone A through peroxyradical reaction.

9206-3715 Lambein, F., Khan, J.K., Kuo, Y.H.(Laboratory of Physiological Chemistry, State University of Ghent, K.L.Ledeganckstraat 35, B-9000 Gent, Belgium) **Free amino acids and toxins in Lathyrus sativus seedlings.** *Planta Medica*, v. 58(11): p. 380-381, 1992 (12 ref, Eng).

The dry seeds of *L.sativus* contain two major free amino acids: ODAP bea-N-oxalyl-alpha, beta-diaminopropionic acid and comoarginine. During the germination of *L.sativus*, several free non-protein amino acids are formed in high concentrations. These include the neurotoxin ODAP, homoserine and its derivatives and four major heterocyclic compounds containing the isoxazolin-5-one ring. Beta (Isoxazolin -5-on-2-yl)-alanine, is the biosynthetic precursor for ODAP and the most prominent heterocyclic amino acid. In the complete seedlings of *L.sativus*, the neurotoxin ODAP usually increases 3 to 4 fold during the first 3 days of germination. Other major non-protein amino acids are homoserine, O-acetylhomoserine, and homoargining.

9206-3716 Lawrence, B.M.(RJR Tobacco Company, Bowman Gray Technical Centre, P O Box 2959, Winston-Salem, North Carolina 27102, USA) **Progress in essential oils.** *Perfumer & Flavorist*, v. 17(4): p. 39-54, 1992 (40 ref, Eng).

Recent developments made in the chemistry of narcissus concrete and absolute (*Narcissus tazetta, N.poeticus*), cumin oil (*Cuminum cyminum* and *Bunium persicum*), basil oil (*Ocimum basilicum*), tangenine oil, and mandarin oil have been reviewed.

9206-3717 Lawson, L.D., Hughes, B.G.(Madaus Murdock, Springville, Utah 84663, USA) **Characterization of the formation of allicin and other thiosulfinates from garlic.** *Planta Medica*, v. 58(4): p. 345-350, 1992 (24 ref, Eng).

The effects of pH, neutralization after acidification, time, and temperature on the yield of dialkyl thiosulfinates released from garlic *Allium sativum* powder and garlic cloves were determined. All dipropenyl thiosulfinates were formed at an optimum pH of 4.5-5.0. The methyl propenyl thiosulfinates and dimethyl thiosulfinate were optimally formed at pH 6.5-7.0 and pH 5.5, respectively. Neutralizatiion of the pH failed to restore thiosulfinate generation from garlic previously incubated at pH 3 or below. The dipropenyl thiosulfinates were completely formed in 0.3 min at 37 degree C. While the methyl throsulfinates were not completely formed until 3.5 min. Allyl 1-propenyl thiosulfinate was the most rapidly formed, and the most unstable, thiosulfinate. The stability of the dipropenyl thiosulfinates was improved at pH 4.5 or lower. Drying garlic at 60 percent C has no effect on alliin or the rate of formation of the dipropenyl thiosulfinates, but decreased trans-1-propenylcysteine sulfoxide (isoalliin) and the rate of formation of the methyl thiosulfinates.

9206-3718 Lee, M.W., Tanaka, T., Nonaka, G.I. , Nishioka, I. (Faculty of Pharmaceutical Sciences, Kyushu University 62, 3-1-1 Maidashi, Higashi-ku, Fukuoka 812, Japan) **Dimeric ellagitannins from Alnus japonica.** *Phytochemistry*, v. 31(8): p. 2835-2839, 1992 (13 ref, Eng).

Two new hydrolysable tannins, alnusjaponins A and B, were isolated from the leaves of *A.japonica*, along with 12 known hydrolysable tannins and related compounds, namely 5-O-galloyl-(-)-shikimic acid, 2,3-(S)-hexahydroxydiphenoyl-D-glucose, 4,6-di-O-galloyl-D-glucose, 1,4-di-O-galloyl-beta-D-glucose, 4,6-(S)-valoneoyl-D-glucose, strictinin, gemin D, pedunculagin, praecoxin A, flosin A, stachyurin and casuarinin. The structures of alnusjaponins A and B were elucidated on the basis of spectral and chemical evidence as dimeric ellagitannins consisting of pedunculagin and strictinin moieties in which the mode of linkage is different.

9206-3719 Lee, S.S., Lin, C.J., Liu, K.C.(School of Pharmacy, College of Medicine, National Taiwan University, 1 Jen-Ai Road, Sec. 1, Taipei 100, Taiwan, Republic of China) **Two triterpenes from Paliurus ramosissimus.** *Journal of Natural Products*, v. 55(5): p. 602-606 , 1992 (6 ref, Eng).

Two additional triterpenes 24-hydroxyceanothic acid and 27-hydroxy ceanothic acid, have been isolated as dimethyl esters from the roots of *P.ramosissimus*. Their structures have been determined by correlation with ceanothic acid and spectral analysis. Dimethyl ester of 27-hydroxyceanothic acid is a new triterpene while that of 24-hydroxyceanothic acid is identical to granulosic acid dimethyl ester.

9206-3720 Lee, Y.B., Yoo, S.J., Kim, J.S. , Kang, S.S.(College of Pharmacy, Sung Kyun Kwan University, Suwon 440-746, Korea) **Triterpenoid saponins from the roots of Caragana sinica.** *Archives of Pharmacal Research*, v. 15(1): p. 62-68 , 1992 (26 ref, Eng).

From the roots of *C.sinica*, a new saponin named caraganoside A was isolated and its structure was elucidated as 3-O-beta-D-xylopyranosyl (1-2)-{beta-D-glucopyranosyl (1-3)-alpha-L-arabinopyranosyl oleanolic acid 28-O-beta-D-glucopyranosyl ester. Kalopanax saponin F, hemsloside Ma3 and aralozide A were also isolated and characterised.

9206-3721 Leitao, S.G., Kaplan, M.A.C., Delle Monache, F.*, Akihisa, T., Tamura, T.(Nucleo de Pesquisa de Produtos Naturais, Universidade Federal do Rio de Janeiro, Ilha da Cidade Universitaria, 21941, Brazil) **Sterols and sterol glucosides from two Aegiphila species.** *Phytochemistry*, v. 31(8): p. 2813-2817, 1992 (19 ref, Eng).

The barks of *A.ihotzkyana* and *A.obducta* contain several 24-ethyl- and 24-methylsterols. Among these, stigmasterol, clerosterol, 22-dehydroclerosterol, and the respective beta-glucosides were the dominant sterols. The glucoside of 22-dehydroclerosterol is described for the first time. The compositions of the free sterol fractions of both Aegiphila species were found to be very similar to those of several *Clerodendrum* species of the same family.

9206-3722 Lin, C.N., Shieh, W.L., Jong, T.T.(Natural Products Research Center, Kaohsiung Medical College, Kaohsiung, Taiwan 80731, R O C) **A pyranodihydrobenzoxanthone epoxide from Artocarpus communis.** *Phytochemistry*, v. 31(7): p. 2563-2564, 1992 (8 ref, Eng).

From the root bark of *A.communis*, a novel pyranodihydrobenzoxanthone epoxide, named artomunoxanthotrione epoxide, was isolated and determined by spectoscopic methods, chemical reaction, and X-ray crystallographic analysis.

9206-3723 Lin, C.N., Shieh, W.L.(Natural Products Research Center, Kaohsiung Taiwan 807, R.O.C.) **Pyranoflavonoids from Artocarpus communis.** *Phytochemistry*, v. 31(8): p. 2922-2924, 1992 (10 ref, Eng).

From the root bark of *A.communis*, a known compound, cyclomulberrin, and three new pyranoflavonoids, named cyclocommunol ($C_{20}H_{16}$)6; mp 16062 degree C), cyclocommunin ($C_{25}H_{24}O_6$; mp 277-79 degree C) and dihydroisocycloartomunin ($C_{26}H_{26}O_7$; mp 250-52 degree C) respectively, were isolated and characterized.

9206-3724 Lin, W.H., Ye, Y., Xu, R.S.(Shanghai Institute of Materia Medica, Academia Sinica, Shanghai 200 031, China) **Chemical studies on new stemona alkaloids, IV. Studies on new alkaloids from Stemona tuberosa.** *Journal of Natural Products*, v. 55(5): p. 571-576 , 1992 (9 ref, Eng).

Four new alkaloids, tuberostemonone ($C_{22}H_{31}NO_6$, mp 208-09 degree), tuberostemonol ($C_{22}H_{31}NO_5$), stemoamide ($C_{12}H_{17}NO_3$), tuberostemospironine ($C_{13}H_{19}NO_4$, mp 245-46 degree) together with two known alkaloids, tuberostemonine, and didehydrotuberostemonine have been isolated from the roots of *S.tuberosa* and their structures elucidated by IR, MS, 1D-and 2D-NMR techniques including nOe spectra and homonuclear and heteronuclear spectral analysis.

9206-3725 Liu, K., Roeder, E., Chen, H.L. , Xiu, X.J.(Department of Pharmacy, Liaoning College of Traditional Chinese Medicine, Shenyang, People's Republic of China) **Pyrrolizidine alkaloids from Eupatorium fortunei.** *Phytochemistry*, v. 31(7): p. 2573-2574, 1992 (5 ref, Eng).

Three pyrrolizidine alkaloids were isolated from *E.fortunei* and their structures determined by spectroscopic methods. One of them is new and the structure has been elucidated by 2D NMR analysis.

9206-3726 Maddonado, E., Marquez, C.I. , Ortfga, A.(Instituto de Quimica, Universidad Nacional Autonoma de Mexico, Circuito Exterior, Ciudad Universitaria, Coyoacan 04510, Mexico, D.F.) **A thymol derivative from Calea nelsonii.** *Phytochemistry*, v. 31(7): p. 2527-2528, 1992 (4 ref, Eng).

One new and three previously described thymol derivatives were isolated from the aerial parts of *C.nelsonii*. Transesterificationproducts of these compounds were obtained under treatment with bentonitic earth.

9206-3727 Mahran, G.H., Kadry, H.A., Thabet, C.K., El-Olemy, M.M., Al-Azizi, M.M., Schiff Jr, P.L., Wong, L.K., Liv, N.(Department of Pharmacognosy, Faculties of Pharmacy, Cairo) **GC/MS analysis of volatile oil of fruits of Anethum graveolens.** *International Journal of Pharmacognosy*, v. 30(2): p. 139-144, 1992 (23 ref, Eng).

The composition of the steam distilled oil of the air-dried powdered fruits of *A.graveolens*, grown in Egypt, was investigated by GC/MS. Seventeen components were identified of which limonene (30.3 percent), dillapiole (26.8 percent) and carvone (22 percent) were major and amounted to 79 percent. Piperitone (8.2 percent), the fourth major component, D8-dehydro-p-cymene, camphor and linalylacetate are reported in the oil for the first time.

9206-3728 Mahran, G.H., Kadry, H.A., Thabet, C.K., El-Olemy, M.M., Al-Azizi, M.M.,.Schiff Jr, P.L., Wong, L.K.(Department of Pharmacognosy, Faculties of Pharmacy, Cairo) **GC/MS analysis of volatile oil from Eruca sativa seeds.** *International Journal of Pharmacognosy*, v. 30(2): p. 135-137, 1992 (14 ref, Eng).

The composition of the steam distilled oil of air-dried crushed seeds of *E.sativa* was investigated by GC/MS. Four isothiocyanates were identified in the volatile oil, three of which are reported for the first time from *Eruca* seeds. In addition, 4-methylthiopentanonitrile and four other non-isothiocyanate derivatives were also identified for the first time in the oil.

9206-3729 Maisenbacher, P., Kovar, K.A.*(Pharmazeutisches Institut der Universitat Tubingen, Auf der Morgenstelle 8, D(W)-7400 Tubingen, Federal Republic of Germany) **Analysis and stability of Hyperici Oleum.** *Planta Medica*, v. 58(4): p. 351-354, 1992 (18 ref, Eng).

Hyperici Oleum (St. John's wort Oil) used in wound healing contains no hypericin. By using the sunlight maceration method lipophilic breakdown products of this compound are obtained which lend the oil its red colour. Hyperforin oil's be identified and quantitatively determined by TLC and HPLC after solid-phase extraction. The stability of hyperforin is limited; sufficient shelf-life could only be achieved by hot maceration of dried flowers with eutanol G and storgae in the absence of air. By gradient HPLC further polar hyperforin analogues were detected in those St.John's wort oils in which hyperforin had decomposed. At the same time flavonoids xanthones could be identified. A procedure for the quantitative determination of flavonoids in St.John's wort was validated. The action of light during preparation of the oil lead to a rise in the content of flavonoids.

9206-3730 Majak, W., Benn, M., McEwani, D. , Pass, M.A.(Research Station, Agriculture Canada, 3015 Ord Rd., Kamloops, B.C. Canada V2B 8A9) **Three nitropropanoyl esters of glucose from Indigofera linnaei.** *Phytochemistry*, v. 31(7): p. 2393-2395, 1992 (16 ref, Eng).

Three 3-nitropropanyol esters of D-glucose were isolated from *I.linnaei*. the known 1,2,6-tri-O-(3-nitropropanoyl)-beta-D-glucopyranose (karakin) and 2,3,4,6-tetra-O-(3-nitropropanoyl)-alpha-D-glucopyranose, and the apparently previously undescribed 3,4,6-tri-O-(3-nitropropanoyl)-alpha-D-glucopyranose. The use of countercurrent chromatography for the isolation of these compounds is described, as well as the spectrocopic evidence which led to their structural elucidation.

9206-3731 Marco, J., Sanz, J.F., Albiach, R.(Departmento de Quimica Organica, Facultad de Ciencias Quimicas, Universidad de Valencia, E-46100 Burjassot, Valencia, Spain) **Caryophyllene derivatives from Pulicaria dysenterica.** *Phytochemistry*, v. 31(7): p. 2409-2413, 1992 (16 ref, Eng).

A reinvestigation of the aerial parts of *P dysenterica* has allowed the isolation of six new caryophyllene derivatives and 12 known ones. 13C NMR data of all these derivatives are reported.

9206-3732 Marco, J.A., Sanz, J.F.*, Albiach, R.(Departamento de Quimica Organica, Facultad de Ciencias Quimicas, Universidad de Valencia, E-46100 Burjassot, Valencia, Spain) **A sesquiterpene ester from Lactuca serriola.** *Phytochemistry*, v. 31(7): p. 2539-2540, 1992 (14 ref, Eng).

The aerial parts of *L.serriola* yielded a new guaiane ester together with five known guaianolides.

9206-3733 Massiot, G., Thepenier, P. , Jacquier, M.J., Le Men-Olivier, L. , Delaude, C.(Faculte de Pharmacie (URC au CNRS n 492) 51 rue Cognacq-Jay, 51096 Reims Cedex, France) **Alkaloids from roots of Strychnos potatorum.** *Phytochemistry*, v. 31(8): p. 2873-2876, 1992 (16 ref, Eng).

Twenty-four compounds isolated and identified in the root bark of *S.potatorum* are: Harmane carboxamide, cantleyine, 18-19-dihydrousambarensine, polyneuridine, norharmane, akuammidine, nor-C-flurorocurarine, ochrolifuanine A, bisnordihydrotoxiferine, ochrolifuanine E, normacusine B, normavacurine, henningsamine, 11-methoxyhenningsamine, dihydrolongicaudatine, dihydrolongatine Y, antirhine, (20R)-and (20S)-dihydroantirhine, 11-methoxy-12-hydroxydiaboline, diaboline, 11-methoxdiaboline, desacetylretuline and diaboline N-oxide. Alkaloids Harmane carboxamide, dihydrolongicandatine and dihydrolongicandatine Y have been isolated for the first time.

9206-3734 Mata, R., Rodriguez, V. , Pereda-Miranda, R., Kaneda, N. , Kinghorn, A.D.*(Laboratorio de Fitoquimica, Departamento de Farmacia, Facultad de Quimica, Universidad Nacional Autonoma de Mexico, Coyoacan 04510, Mexico D.F., Mexico) **Stevisalioside A, a novel bitter-tasting ent-atisene glycoside from the roots of Stevia salicifolia.** *Journal of Natural Products*, v. 55(5): p. 660-666 , 1992 (28 ref, Eng).

A new acetylated ent-atisene glycoside, stevisalioside A (C35H50O15, mp 164-66 degree), has been isolated as a bitter tasting principle from *S.salicifolia* roots. Structure of this compound has been established by spectroscopic analysis. This is the first report of the occurrence of an atisane-type diterpene from the genus *Stevia*.

9206-3735 Mc Andrew, B.A.(Quest International, Ashford, Kent TN24 OLT, England) **Sesquiterpenoids: The lost dimensions of perfumery.** *Perfumer & Flavorist*, v. 17(4): p. 1-12, 1992 (1 ref, Eng).

Classification of the structures of sesquiterpenoids into 18 groups based on proven or suspected biogenetic relationships involving the cyclization of cis-or trans-farnesyl pyrophosphate has been discussed. Occurrence of these compounds in different plant species has been mentioned.

9206-3736 Melhaoui, A., Jossang, A., Bodo, B.*(Laboratoire de Chimie, URA 401 CNRS, Museum National d'Histoire Naturelle, 63, rue Buffon, 75005, Paris, France) **Structure of irniine, a pyrrolidine alkaloid from Arisarum vulgare.** *Journal of Natural Products*, v. 55(7): p. 950-952 , 1992 (8 ref, Eng).

A toxic pyrrolidine alkaloid, irniine, has been isolated from the tubers of *A.vulgare* and its structure elucidated by 2D COSY spectroscopic methods.

9206-3737 Merfort, I., Wendisch, D.(Institut fur Pharmazeutische Biologie der Henrich-Heine-Universitat Dusseldorl, Geb 26,23, Universitatsstr, 1, (D)W-4000 Dusseldorf 1, Federal Republic of Germany) **New flavonoid glycosides from Arnicae flos DAB 9.** *Planta Medica*, v. 58(4): p. 355-357, 1992 (10 ref, Eng).

Five flavonoid glycosides were identified from flowers of *A.montana*, ten from *A.chamissonis* subsp. *foliosa var.incana*. The structures were established on the basis of acid hydroylsis and spectral data (UV, NMR, MS) as the 7-beta-glucosides of pectolinarigenin, apigenin, and chrysoeriol; luteolin 3'-O-beta-glucoside; the 3-beta-glucuronides of kaempferol, isorhamnetin, and 6-methoxykaempferol; the 3,7-di-beta-glucosides of quercetin and patuletin; the 3-beta-glucosides of betuletol and quercetagetin 6,3',4'-trimethyl ether; and the 7-16"-*O-(2-methylbutyryl)*= glucosides of luteolin and eupafolin. The latter four are new natural compounds. Differences between these two *Arnica* species are discussed.

9206-3738 Minghua, C., Ruilin, N., Jun, Z.(Kunming Institute of Botany, Academia Sinica, Kunming, 650204, People's Republic of China) **A steroidal alkaloid from Pachysandra axillaris.** *Phytochemistry*, v. 31(7): p. 2571-2572, 1992 (4 ref, Eng).

The chemical structure of a novel steroidal alkaloid, axillaridine A, from *P.axillaris* has been elucidated as 20alpha-dimethylamino-3-benzoylamino-5alpha-pregn-2 (3)-en-4-one.

9206-3739 Minghua, C., Ruilin, N., Nagasawa, H., Isogai, A., Jun, Z., Suzuki, A.(Kunming Institute of Botany, Sinica Academia, Kunming 650204, People's Republic of China) **A dammarane saponin from Neoalsomitra integrifoliola.** *Phytochemistry*, v. 31(7): p. 2451-2453, 1992 (6 ref, Eng).

Neoalsoside A, a new dammarane saponin, was isolated from *N.integrifoliola* and characterized as 12beta,23beta,25-trihydroxy-(20S)(24S)-epoxydammara ne-3-O-alpha-L-rham nosyl(1-2)-alpha-L-rhamnosyl(1-3)-beta-D-glucoside.

9206-3740 Miyake, M., Inaba, N., Ayano, S. , Ozaki, Y., Maeda, H., Ifuku, Y. , Hasegawa, S.(Wakayama Agricultural Biological Research Institute, 396 1, Tsukatsuki, Momoyama-cho, Naga-gum, Wakayama 649 61, Japan) **Limonoids in Phellodendron amurense(Kihada).** *Yakugaku Zasshi*, v. 112(5): p. 343-347, 1992 (25 ref, Eng).

Limonoids and their glucosides in the seeds and barks of *P amurense* were analyzed. The seeds contained limonin (1950 ppm), obakunone (20 ppm), limonin 17-beta-D-glucopyranoside (820 ppm) and obakunone 17-beta-D-glucopyranoside (1360 ppm). The barks contained limonin (6760 ppm), obakunone (1240 ppm) and nomilin (270 ppm).

9206-3741 Monache, F.D., Cuca Suarez, L.E.(Centro Chimica dei Recettori del C.N.R., Universita Cattolica, Largo F.Vito 1,00168 Rome, Italy) **6-C-Formyl and 6-C-hydroxymethyl flavanones from Petiveria alliacea.** *Phytochemistry*, v. 31(7): p. 2481-2482, 1992 (6 ref, Eng).

Three new flavonoids have been isolated from the leaves of *P.alliacea* and assigned the structures. The 3-O-rhamnosides of dihydrokampferol, dihydroquercetin and myricetin have also been isolated.

9206-3742 Mossa, J.S., Muhammad,I., El-Feraly, F.S.*, Hufford, C.D.(Medicinal, Aromatic and Poisonous Plant Research Center (MAPPRC), College of Pharmacy, King Saud University, Riyadh 11451, Saudi Arabia) **3beta, 12-Dihydroxyabieta-8,11,13-triene-1-one and other constituents from Juniperus excelsa leaves.** *Phytochemistry*, v. 31(8): p. 2789-2792, 1992 (21 ref, Eng).

The leaves of *J.excelsa* yielded the hitherto unreported diterpenoid 3beta, 12- dihydroxyabieta-8, 11,13-triene-1-one together with the known compounds 4-epi-abietal, 4-epi-abietic acid, 4-epi-abietol, (+)-8alpha-hydroxyelemol and (-)-4-epi-catechin. The structural assignments were largely based on the spectral data including those derived from 2D NMR experiments together with chemicalderivation.

9206-3743 Mossa, J.S., El-Domiaty, M.M. , Al-Meshal, I., El-Feraly, F.S, Hufford, C.D., McPhail, D.R., McPhail, A.T.(Department of Pharmacognosy, College of Pharmacy, King Saud, University, Riyadh 11451, Saudi Arabia) **A flavone and diterpene from Psiadia arabica.** *Phytochemistry*, v. 31(8): p. 2863-2868, 1992 (7 ref, Eng).

The aerial parts of *P arabica* yielded two new constituents: a flavone, 5,7,3'-trihydroxy-2',4',5'-trimethoxy flavone, the structre of which derived from spectral data and chemical derivatization, and a kaurane diterpene named psiadian, which was characterized unambiguously from its chemical and spectral data in conjunction with X-ray crystallography.

9206-3744 Nia, M.A., Rao, K.V., Sreeramulu, K., Gunasekar, D. (Department of Chemistry, Sri Venkateswara University, Tirupati 517502, AP, India) **Two new prenylated flavonoids from Paracalyx scariosa.** *Journal of Natural Products*, v. 55(8): p. 1152-1154 , 1992 (10 ref, Eng).

Two new prenylated flavonoids, scariosin and isorhynchospermin, were isolated from the leaves of *P.scariosa*, together with kaempferol, quercetin, kaempferol-3-O-rutinoside, and rutin. The structures of new flavonoids were characterized as (2R,3R)-7,3'-dimethoxy-8-C-prenyltaxifolin and 7,4'-dimethoxy-6-C-prenyl quercetin respectively by their chemical and spectral data.

9206-3745 Noda, N., Kogetsu, H., Kawasaki, T. , Miyahara, K.* (Faculty of Pharmaceutical Sciences, Setsunan University, 45-1, Nagaotoge-cho, Hirakata, Osaka 573-01, Japan) **Scammonins VII and VIII, two resin glycosides from Convolvulus scammonia.** *Phytochemistry*, v. 31(8): p. 2761-2766, 1992 (9 ref, Eng).

Two minor ether-solunble resin glycosides, scammonins VII and VIII, were isolated from Radix scammoniae, the roots of *C.scammonia*. In addition to (2S)-2-methylbutyric acid and tiglic acid, they are composed, respectively, of orizabic acid A and a new glycosidic acid named scammonic acid B, with similar macrocyclic ester structures to those of the sammonic acid A-based scammonins I-VI. Isolation of genuine scammonins III-V, which were previously obtained as peracetates, is also described.

9206-3746 Nunes, D.S., Koike, L., Taveira, J.J., De A.M.Reis, F. (Instituto de Quimica, Universidade Estadual de Campinas, C.P. 6154, Campinas 13081, Sao Paulo, Brazil) **Indole alkaloids from** ***Aspidosperma pruinosum.*** *Phytochemistry*, v. 31(7): p. 2507-2511, 1992 (27 ref, Eng).

Two new indole alkaloids, 10-methoxy-yohimbine and 10-methoxy-4-methylgeissoschizol, and the known compounds yohimbine, beta-yohimbine, compactinervine, 10-methoxy-geissoschizol, 10-methoxy-dihydrocoryantheol, normacusine B and 3,4,5,6-tetrradehydrositsirikine were isolated from the bark of *A.pruinosum.*

9206-3747 Ogawa, K., Aoki, I., Sashida, Y.(Tokyo College of Pharmacy, 1432-I Horinouchi, Hachioji-shi, Tokyo 192-. 03, Japan) **Caesaljapin, cassane diterpenoid from Caesalpinia decapetala var. japonica.** *Phytochemistry*, v. 31(8): p. 2897-2898, 1992 (12 ref, Eng).

A new cassane diterpenoids, caesaljapin (C21H28O5; mp 216-220) was isolated from *C.decapetala var. japonica* roots and the structure was deduced from spectral data. The known compounds, lup-20(29)-en-3beta-ol, betulinic acid, 3-de-oxysappanchalcone, sappanchalcone, catechin, methyl gallate and 3-hydroxy-1-(4-hydroxy-3-methoxtpenyl)-1-propanone were also isolated.

9206-3748 Ori, K., Mimaki, Y., Mito, K. , Sashida, Y.*, Nikaido, T., Ohmoto, T. , Masuko, A.(Tokyo College of Pharmacy, 1432-1, Horinouchi, Hachioji, Tokyo 192-03, Japan) **Jatropham derivatives and steroidal saponins from the bulbs of Lilium hansonii.** *Phytochemistry*, v. 31(8): p. 2767-2775, 1992 (17 ref, Eng).

Two new jatropham derivatives and three new steroidal saponins were isolated from the fresh bulbs of *L.hansonii*, along with previously known compounds. The structures of the new compounds were elucidated, on the basis of spectroscopic data and chemical evidence. The stereostructure of jatropham dimer, the plain structure of which was presented previously, was confirmed by X-ray crystallographic analysis. The inhibitory activity on cyclic AMP phosphodiesterase of the steroidal saponins was evaluated.

9206-3749 Osborne, A.G., Warmsley, J.F. , Dimitrova, G.T. (Department of Chemistry and Biological Chemistry, University of Essex, Wivenhoe Park, Colchester, Essex CO4 3SQ, UK) **1H- and 13C-NMR Spectral studies of some 2,4-dimethoxyquinolines. Inconsistencies with montrutanine, an alkaloid from Ruta maontana.** *Journal of Natural Products*, v. 55(5): p. 589-595 , 1992 (23 ref, Eng).

Unambiguous 1H- and 13C-NMR spectral assignments are reported for 2,4-dimethoxyquinoline (1) (an alkaloid isolated from *R.montana* and named montrutanine), verified by a parallel study of the 6-methyl derivative. From the results it appears that the structure of the alkaloid montrutanine is unlikely to be 1. Some comments regarding possible alterative structures of 1 are given.

9206-3750 Otsuka, H., Takeda, Y., Yamasaki, K., Takeda, Y. (Institute of Pharmaceutical Sciences, Hiroshima University School of Medicine, 1-2-3 Kasumi, Minami-ku, Hiroshima 734, Japan) **Structural elucidation of dendranthemoides A and B: Two new beta-ionone glucosides from Dendranthema shiwogiku.** *Planta Medica*, v. 58(4): p. 373-375, 1992 (10 ref, Eng).

From the aerial parts of *D.shiwogiku* three beta-ionone glucosides, roseoside, dendranthemoside A and dendranthemoside B were isolated. The structures of new compounds were elucidated on the basis of spectroscopic data and the results of an enzymic hydrolysis of dendranthemoside.

9206-3751 Pandey, U.C., Zaman, S.S., Sharma, R.P.(Natural Products Chemistry Division, Regional Research Laboratory, Jorhat 785006, Assam, India) **Isolation of 1,2-epoxypulegone from** *Acrocephalus indicus*. *Planta Medica*, v. 58(4): p. 388, 1992 (9 ref, Eng).

Preparative TLC of combined hexane and ethylacetate fraction obtained from the above ground parts of *A.indicus* furnished an oil, which was characterized as (+)-1,2-epoxypulegone (lippione) by comparing its IR and 13C NMR and mass spectra with the reported data.

9206-3752 Park, I.Y., Kim, B.K., Kim, Y.B.(College of Pharmacy, Seoul National University, Seoul 151-742, Korea) **Constituents of Paulownia tomentosa stem (III): The crystal structure of methyl 5-hydroxy-dinaphtho {1,2-2',3'} furon-7, 12-dione-6-carboxylate.** *Archives of Pharmacal Research*, v. 15(1): p. 52-57 , 1992 (15 ref, Eng).

Structural analysis of a furanoquinone title compound isolated from *P.tomentosa* stem has been discussed.

9206-3753 Parmar, V.S., Jha, H.N., Gupta, A.K., Prasad, A.K. (Department of Chemistry, University of Delhi, Delhi 110 007, India) **Agamanone, a flavanone from Agave americana.** *Phytochemistry*, v. 31(7): p. 2567-2568, 1992 (12 ref, Eng).

5,7-Dihydroxy-6,5'-dimethoxy-3',4'-methylenedioxyflavanone has been isolated for the first time from *A.americana*.

9206-3754 Parvez, A., Choudhary, M.I., Akhter, F., Noorwala, M., Mohammad, F.V., Hasan, N.M., Zamir, T., Ahmad, V.U.(H E J Research Institute of Chemistry, University of Karachi, Karachi 752 270, Pakistan) **Perovskone: A triterpene with a novel carbon skeleton from Perovskia abrotanoides.** *Journal of Organic Chemistry*, v. 57(16): p. 4339-4340 , 1992 (9 ref, Eng).

A new triterpene, perovskone (C30H42O3, mp 192 degree, yield 0.0005 percent), with a novel carbon skeleton, has been isolated from the whole plant of *P.abrotanoides*. Structure of perovskone has been established on the basis of 2D NMR spectroscopic studies and single-crystal X-ray analysis. A possible biogenetic route for the compound has also been suggested.

9206-3755 Pauli, G.F., Matthiesen, U., Junior, P.(Institute fur Pharmazeutische Biologie, Geb, 2623, Univertsitatsstrasse 1, Heinrich-Heine Universitat, 4000 Dusseldorf 1, Germany) **Aleppotrioloside, an aliphatic alcohol glycoside from Adonis aleppica.** *Phytochemistry*, v. 31(7): p. 2522-2524, 1992 (6 ref, Eng).

The glycosidic conjugate of a trivalent aliphatic alcohol named aleppotrioloside has been isolated from the entire plant of *A.aleppica*. Its structure was established mainly by spectroscopic means (1H NMR, 13C NMR, 2D NMR), but the DCI-NH3-MS-method was also a good source of structural information concerning both the aglycone and the sugar moiety.

9206-3756 Quijano, L.,.Gomez-Garibay, F. , Garcia-Perez, G., Rios, T.(Instituto de Qumicia, Universidad Nacional Automona de Mexico, Circuito Exterior, Ciudad Universitaria, Coyoacan 04510, Mexico, D.F. Mexico) **Flavonoids from Ageratum corymbosum.** *Phytochemistry*, v. 31(8): p. 2859-2862, 1992 (10 ref, Eng).

Investigation of a new collection of *A.corymbosum* aerial parts, resulted in the isolation of three new flavonoids, 4'-hydroxy-5,6,7,3'-tetramethoxyflavonone, 5-hydroxy-6,7,2',3'4',5'-hexamethoxyflavone and 3'-hydroxy-5,6,7,2',4',5'-hexamethoxyflavone, named agecorynins E,F and G, respectively. Their structures were established by spectral methods and chemical transformations. 5-Hydroxy-7,8,2',3',4',5'-hexamethoxyflavone (isoagecorynin F), obtained from agehoustin B, is also reported.

9206-3757 Rashid, M.A., Gray, A.I., Waterman, P.G.*, Armstrong, J.A.(Phytochemistry Research Laboratories, Department of Pharmaceutical Sciences, University of Strathclyde, Glasgow G1 1XW, Scotland, UK) **Coumarins from Eriostemon spicatus.** *Journal of Natural Products*, v. 55(5): p. 685-687 , 1992 (9 ref, Eng).

Scopoletin, dracunculin, heraclenin, deoxybruceol, ramosin, anisocoumarin and two novel coumarin identified as (+)-7-(3-methylbut-2-enyloxy)-8-(2-hydroxy-3methylbut-3-enyl) coumarin and (+)-7-(3-methylbut-2-enyl oxy)-8-(4-hydroxy-3-methylbut-2-enyl) coumarin have been isolated from the aerial parts of *E.spicatus*.

9206-3758 Reisch, J., Goj, O., Wickramasinghe, A., Herath, H.M.T., Henkel, G.(Institut fur Pharmazeutische Chemie, Westfalische Wilhelms-Universitat Munster, D-4400 Munster, Germany) **Carbazole alkaloids from seeds of Murraya koenigii.** *Phytochemistry*, v. 31(8): p. 2877-2879, 1992 (10 ref, Eng).

Two new carbozole alkaloids, isomahanine ($C_{23}H_{25}NO_2$, mp 184 degree C) and murrayanol ($C_{24}H_{25}NO_2$; mp 161 degree C) were isolated from the fruits of *M.koenigii* along with the five previously reported carbazole alkaloids, mahanimbine, murrayazolidine, girinimbine, koenimbine and mahanine. The structures of isomahanine and murrayanol were confirmed by the formation of 9-methoxymahanimbicine on their methylation and cyclisation, respectivety. X-ray analysis was carried out on murrayazolidine.

9206-3759 Riaz, M., Khalid, M.R., Chaudhary, F.M.(PCSIR Laboratories Complex, Lahore 54600, Pakistan) **Lipid fractions and fatty acid composition of different varieties of basil seed oil.** *Pakistan Journal of Scientific and Industrial Research* , v. 34(9): p. 346-347, 1991 (8 ref, Eng).

Basil *Ocimum basilicum* seed oil (10.56-15.55 percent) has been examined for its physico-chemical and fatty acid composition resulting into polar (2.2 percent) and neutral (97.8 percent) lipids. The neutral lipids afforded hydrocarbons, wax esters, triglycerides, free fatty acids, diglycerides, sterols and monoglycerides. The fatty acid composition of the lipids ranged from C16 to C22 acids.

9206-3760 Rodrigues, FO, E., Fernandes, J.B. , Vieira, P.C., Das, M.F., Da Silva, G.F.(Departmento de Quimica, Universidade Federal de Sao Carlos, CP 676, 13560 Sao Carlos, SP, Brazil) **Canthin-6-one alkaloids from Picrolemma granatensis.** *Phytochemistry*, v. 31(7): p. 2499-2501, 1992 (11 ref, Eng).

From the branches of *P.granatensis*, besides scopoletin, the known canthin-6-one alkaloids 9-methoxycanthin-6-one, 9-hydroxycanthin-6-one, 4,5-dimethoxycanthin-6-one and the two new 8-hydroxy-9-methoxycanthin-6-one and 9-methoxycanthin-6-one 3-N-oxide were identified by full spectral analysis.

9206-3761 Rudel, D., Bathori, M., Gharbi, J. , Girault, J.P., Racz, I., Melis, K. , Szendrei, K., Lafont, R.*(Ecole Normale Superieure, Departement de Biologie, Laboratoire de Biochimie et Physiologie du Developpement, CNRS URA 686, 46 rue d'Ulm F-75230 Paris Cedex 05, France) **New ecdysteroids from Serratula tinctoria.** *Planta Medica*, v. 58(4): p. 358-364, 1992 (26 ref, Eng).

Six new ecdysteroids have been isolated from *S.tinctoria*; these are: the 2,22-and 3,22-diacetates of 20-hydroxyecdysone, 5beta-hydroxyrubrosterone, 3-epi-poststerone, 3-epi-rubrosterone, and 22-oxo-20hydroxyecdysone. These minor compounds were found together with the known ecdysteroids, 20-hydroxyecdysone, its 2-,3-and 22-monoacetates, rubrosterone, poststerone, polypodine B (5beta, 20-dihydroxyecdysone), pterosterone (25-deoxy-20,24-dihydroxyecdysone), and makisterone C (24-ethyl-20-hydroxyecdysone). All these ecdysteroids were isolated by a combination of several chromatographic techniques and identified using standard mass spectrometric and 2D 1H-NMR techniques.

9206-3762 Sakurai, N., Kobayashi, M. , Shigihara, A., Inoue, T. (Faculty of Pharmaceutical Sciences, Hoshi University, Ebara 2-4-41 Shinagawa-ku, Tokyo 142, Japan) **Berchemolide, a novel dimeric vanillic acid glucoside from Berchemia racemosa.** *Chemical & Pharmaceutical Bulletin*, v. 40(4): p. 851-853 , 1992 (10 ref, Eng).

A new phenol glycoside named berchemolide ($C_{14}H_{16}O_8$, mp 311-12 degrees) was isolated together with (+)-catechin and (-)-epicatechin (as acetates), from the stems of *B.racemosa*. The structure of berchemolide, having a dimeric dilactone structure with a 22-membered ring, was determined on the basis of spectral and chemical investigations. The confirmation of berchemolide was calculated by MNDO (modified neglact of diatomic overlap).

9206-3763 Saraswathy, A., Purushothaman, K.K. , Patra, A., Dey, A.K., Kundu, A.B.(Captain Srinivasa Murti Drug Research Institute for Ayurveda, Madras 600 106, TN, India) **Shoreaphenol, a polyphenol from Shorea robusta.** *Phytochemistry*, v. 31(7): p. 2561-2562, 1992 (8 ref, Eng).

A novel benzofuran, shoreaphenol, has been isolated from the bark of *S.robusta*. It structure has been settled from detailed analysis of its 1H NMR, 13C NMR and mass data.

9206-3764 Sariyar, G., Gulgeza, H.B., Gozler, B.(Ege University, Faculty of Pharmacy, Department of Pharmaceutical Chemistry, Bornova, Izmir, Turkey) **Salutaridine N-oxide from the capsules of Papaver bracteatum.** *Planta Medica*, v. 58(4): p. 364-369, 1992 (12 ref, Eng).

A novel compound, salutaridine N-oxide has been isolated from *P.bracteatum* in which the major alkaloids were salutaridine and thebaine. Semisynthetic salutaridine N-oxide was preparedfor structure confirmation Other components of the alkaloidal fraction were isothebaine, oripavine, neopine, and thebaine N-oxide.

9206-3765 Sashida, Y., Ogawa, K., Mori,N. , Yamanouchi, T.(Tokyo College of Pharmacy, 1432-1 Horinouchi, Hachioji, Tokyo 192-03, Japan) **Triterpenoids from the fruit galls of Actinidia polygama.** *Phytochemistry*, v. 31(8): p. 2801-2804, 1992 (12 ref, Eng).

Five new triterpenoids, along with seven known ones, were isolated from the fruit galls of *A.polygama*. The new compounds were determined to be 2alpha, 3alpha, 23, 24-tetrahydroxyurs-12-en-28-oic acid, 2alpha, 3alpha-dihydroxyurs-12-en-24-al-28-oic acid, 2,alpha,3alpha-24-trihydroxyurs-12-ene-23,28-dioic acid, 2alpha, 3alpha, 23-trihydroxyursa-12, 20(30)-dien-28-oic acid and 3beta-(trans-p-coumaroyloxy)-2alpha, 23-dihydroxy-urs-12-en-28-oic acid on the basis of chemical and spectral evidence.

9206-3766 Sashida, Y., Kubo, S., Mimaki, Y. , Nikaido, T., Ohmoto, T.(Tokyo College of Pharmacy, 1432-1, Horinouchi, Hachioji, Tokyo 192-03, Japan) **Steroidal saponins from Smilax riparia and S.china.** *Phytochemistry*, v. 31(7): p.2439-2443, 1992 (30 ref, Eng).

Two new neotigogenin glycosides were isolated from the rhizomes and roots of *Smilax riparia* and a new isonarthogenin glycoside from those of *S.china*. The structures were elucidated by a combination of spectroscopic analysis and hydrolysis followed by spectral and chromatographic analysis. Several known saponins were also isolated and identified. The inhibitory activity of the saponins on cAMP phosphodiesterase was examined.

9206-3767 Schopke, T., Wray, V., Kunath, A. , Hiller, K. (Humboldt-Universitat zu Berlin, Fachbereich Pharmazie, Goethestr. 54, 0-1120 Berlin, Germany) **Bayogenin and asterogenic acid glycosides from Bellis perennis.** *Phytochemistry*, v. 31(7): p. 2555-2557, 1992 (8 ref, Eng).

Four novel triterpenoid saponins were isolated from the underground parts of *B.perennis*. The structures were elucidated.

9206-3768 Sen, S., Sahu, N.P., Mahato, S.B.(Indian Institute of Chemical Biology, 4 Raja S.C.Mullick Road, Jadavpur, Calcutta 700032, WB, India) **Flavonol glycosides from Calotropis gigantea.** *Phytochemistry*, v. 31(8): p. 2919-2921, 1992 (17 ref, Eng).

Besides isolation and characterization of isorhamnetin-3-O-rutinoside, isorhamnetin-3-O-glucopyranoside and taraxasteryl acetate, a new flavonol trisaccharide, calotropiside was isolated from the aerial parts of *C.gigantea*, and its structure was established as isorhamnetin-3-O-*2-O-beta-D-galactopyranosyl-6-O-alpha-L-rhamnopyrano syl*-beta-D-glucopyranoside by a combination of fast atom bombardment mass spectroscopy, 1H and 13C NMR spectra and some chemical degradations.

9206-3769 Sharma, V.M., Rao, P.S.(Department of Chemistry, Kakatiya University, Warangal, AP, India) **A prenylated chalcone from the roots of Tephrosia spinosa.** *Phytochemistry*, v. 31(8): p. 2915-2916, 1992 (6 ref, Eng).

A new diisoprenylated chalcone ($C_{25}H_{28}O_3$) has been isolated from the roots of *T.spinosa* and its structure elucidated from chemical data.

9206-3770 Sharma, A., Sehgal, S.(Department of Foods and Nutrition, Haryana Agricultural University, Hissar-125004, Haryana, India) **Effect of domestic processing, cooking and germination on the trypsin inhibitor activity and tannin content of faba bean (Vicia faba).** *Plant Foods for Human Nutrition*, v. 42(2): p. 127-133 , 1992 (28 ref, Eng).

The effects of domestic processing methods like soaking for 12h, dehulling, ordinary cooking of whole as well as dehulled seeds at 15 lbs/inch pressure for 15 and 25 min, and germination for 24,36 and 48h were observed on trypsin inhibitor (TIA) and tannin content of two varieties of faba bean viz., VH-131 and WF. A non-significant reduction in TIA was observed on soaking and dehulling, while tannins showed a reduction of 42 and 51 percent on soaking in VH 131 and WF, respectively. Dehulled seeds showed a decline in tannin content by 70 percent to 73 percent in two varieties. There was a singificant reduction in TIA (75-76 percent) and tannin (76-81 percent) on cooking. While autoclaving for 25 min almost completely eliminated both of these stress factors. Germination of seeds for 48h led to a reduction of 64-65 percent in TIA and 90-91 percent in tannins, which was more than germination for 24 and 36h. Soaked seeds gave positive results of both these antinutrients.

9206-3771 Sharma, M.L., Raina, R.V., Khanna, R.K., Sharma, O.S., Akhileshwar Singh(National Botanical Research Institute, Lucknow, UP, India) **Essential oil from the leaves of Atlantia monophylla (Correa).** *Parfumerie und Kosmetik*, v. 73(5): p. 336-337, 1992 (6 ref, Eng).

The leaves of *A.monophylla* hydrodistillation gave 0.2 percent essential oil. Physico-chemical constituents of the oil are described. Out of the 18 constituents detected in the oil sabinene (28.51 percent) and methyl-iso-eugenol (32.38 percent) are the major ones. The oil has been found to exhibit pronounced antifungal activity against many pathogenic and saprophytic fungi.

9206-3772 Sheu, S.Y., Hsu, F.L., Lin, Y.C.(Graduate Institute of Pharmaceutical Sciences, Taipei Medical College, 250, Wu-Hsing Street, Taipei, Taiwan, R.O.C.) **Two gallates from Quercus glauca.** *Phytochemistry*, v. 31(7): p. 2465-2468, 1992 (18 ref, Eng).

Two novel phenol glucoside gallates, querglanin and isoquerglanin, were isolated from the leaves of Quercus glauca. From chemical and spectroscopic evidence, they were characterized as 2-iso-propyl-4-hydroxyl-5-methyl phenol 1-O-beta-D-(6'-O-gallyl) glucopryanoside and 2-iso-propyl-4-hydroxyl-5-methyl phenol 1-O-beta-D-(3'-O-galloyl) glucopyranoside, respectively. In addition, the occurrence of seven known flavonoids was demonstrated.

9206-3773 Shoji, N., Umeyama, A., Sunahara, N., Arihara, S. (Faculty of Pharmaceutical Sciences, Tokushima Bunri University, Tokushima-shi, Tokushima 770, Japan) **Ajureptoside, a novel C9 iridoid glucoside from Ajuga reptans.** *Journal of Natural Products*, v. 55(7): p. 1004-1006 , 1992 (4 ref, Eng).

A novel C9 iridoid glucoside, named ajureptoside, has been isolated from whole plant of *A.reptans* and characterized on the basis of spectroscopic data.

9206-3774 Shrivastava, S.P.(Department of Chemistry, Dr. Hari Singh Gour University, Sagar 470003, MP, India) **Chemical investigation of Prunus cerasoides.** *Journal of Research and Education in Indian Medicine*, v. 11(2): p. 1-2, 1992 (8 ref, Eng).

Phytochemical investigation of the ethanolic extract of the seeds of *P cerasodies* syn. *P.puddum* has resulted in the isolation of a new saponin $C_{85}H_{60}O_{6}$, m.p. 295 degree (d) which was characterised as beta-sitosterol-3-O-beta-D. galactopyranoside by colour reactions, chemical analyses, degradatiion products and spectral data.

9206-3775 Sigstad, E., Catalan, C.A.N., Diaz, J.G., Herz, W. (Instituto de Quimica Organica, Facultad de Bioquimica y Farmacia, Universidad de Tucuman, Ayanucho 491,4000 S.M.de Tucuman, Argentina) **Sesquiterpene lactones, chromans, and other constituents of Ophryosporus piquerioides.** *Journal of Natural products*, v. 55(8): p. 1155-1156 , 1992 (8 ref, Eng).

The aerial parts of *O.piquerioides* yielded two new stereoisomeric, 3,4-dihdroxy-2-2-dimethyl-6,7-dimethoxychromans in addition to three known eudesmanolides , 1beta, 5alpha-dihydroxy-10(14)eudesmene, a known benzofuran, scopoletin, and syringaresinol.

9206-3776 Singh, P., Bhargava, S.(Department of Chemistry, University of Rajasthan, Jaipur 302004, Rajasthan, India) **A dithienylacetylene ester from Eclipta erecta.** *Phytochemistry*, v. 31(8): p.2883-2884, 1992 (7 ref, Eng).

The roots of *E.erecta* afforded a new dithienylacetylene ester ($C_{18}H_{16}O_{2}S_{2}$) along with several previously reported thiophene derivatives.

9206-3777 Takatsuki, S., Wang, J.D., Narui, T., Okuyama, T.. **Studies on the compounds of crude drug "Kim-soan-lian".** *Journal of Japanese Botany*, v. 67(2): p. 121-123 , 1992 (2 ref, Eng).

Dried herbs of "Kim-soan-lian" (dried from the whole plant or the aerial part of *Anoectochilus formosanus* and *A.koshunensis* were extracted with Ac OEt, MeOH and water. The Ac OEt extract yieled two compounds which were isolated and identified as palmitic acid and 1,3-dipalmitin on the basis of comparison with the physical data of authentic samples. The MeOH extract yielded two compounds, identified as 4-hydroxycinnamic acid and beta-sitosterol beta-D-glucopyranoside in comparison with the physical data of authentic samples.

9206-3778 Tan, R.X., Jian, Z. J.(State Key Laboratory of Applied Organic Chemistry at Lanzhou University, Lanzhou 73000, Peoples Republic of China) **Eudesmanolides and other constituents from Artemisia argyi.** *Planta Medica*, v. 58(4): p. 370-372, 1992 (12 ref, Eng).

The aerial parts of *A.argyi* afforded beta-sitosterol, stigmasterol, alpha-amyrin, beta-amyrin, friedelin, naringenin, quercetin, and four eudesmane derivatives. Two of which were new eudesmanolides. The structures of the novel compounds were elucidated by high field NMR techniques.

9206-3779 Tan, R.X., Jia, Z.J.(Institute of Organic Chemistry, Lenzhou University, Lanzhou 730000, P.R.China) **Sesquiterpenes from Artemisia rutifolia.** *Phytochemistry*, v. 31(7): p. 2534-2536, 1992 (11 ref, Eng).

The aerial parts of *A.rutifolia* afforded, in addition to several known compounds, a new costic acid derivative, an eudesmanolide and a guaianolide. The C-5 configuration of 5beta, 10alpha-dihydroxy-1alpha-H-dehydroleucodin was revised. The structures were elucidated by spectroscopic methods and a chemical transformation.

9206-3780 Tandon, M., Shukla, Y.N., Thakur, R.S.(Central Institute of Medicinal and Aromatic Plants, Lucknow 226016, UP, India) **4-Hydroxy-8, 11-oxidoheneicosanol and other constituents from Chlorophytum arundinaceum roots.** *Phytochemistry*, v. 31(7): p. 2525-2526, 1992 (5 ref, Eng).

Besides stigmasterol, stigmasterol-beta-D-glucopyranoside, nonacosane, tetracosanoic and triacontanoic acids, two new compounds have been isolated from the roots of *C.arundinaceum* and characterized as 4-hydroxy-8,11-oxidoheneicosanol and pentacosyl docosanoate by physicochemical data.

9206-3781 Taylor, W.C.(Department of Organic Chemistry, University of Sydney, Sydney 2006, Australia) **Bioactive products from plants.** *Chemistry in Australia*, v. 58(2): p. 56-59, 1991 (5 ref, Eng).

Evolution of natural products chemistry in Australia in briefly reviewed and opportunities for future work are discussed.

9206-3782 Torrenegra, R., Pedrozo, J., Robles, J., Waibel, R., Achenbach, H.(Departamento de Quimica, Faculdad de Ciencias, Universidad Javeriana, Bogota, Colombia) **Diterpenes from Gnaphalium pellitum and Gnaphalium graveolens.** *Phytochemistry*, v. 31(7): p. 2415-2418, 1992 (29 ref, Eng).

13-epi-Cyclosclareol, a novel labdane-type diterpene with a cyclopropane ring has been isolated from *G.pellitum* as well as from *G.graveolens*. Structure elucidation was achieved by spectroscopic methods. The known diterpenes(-)-16-kauren-19-oic acid, (-)-11beta-acetoxy-16-kauren-19-oic acid, 13-epi-sclareol and a mixture of sitosterol and stigmasterol were also isolated.

9206-3783 Tsurumi, S., Takagi, T., Hashimoto, T.(Graduate School of Science and Technology, Kobe University, Rokkodai, Nada-ku, Kobe 657, Japan) **A gamma-Pyronyl-triterpenoid saponin from Pisum sativum.** *Phytochemsitry*, v. 31(7): p. 2435-2438, 1992 (12 ref, Eng).

A new triterpenoid saponin was isolated from *P.sativum* and characterized as 3-O-alpha-L-rhamnopyranosyl-(1-2)-beta-D-galactopyranosyl (1-2)-beta-D-glucuronopyranosyl (1-2)-22-O-3'-hydroxy-2'-methyl-5',6'-dihydro-4'-pyrone (6'-)-3beta, 22beta, 24-trihydroxyolean-12-ene. The name chromosaponin I is proposed. Chromosaponin I yielded soyasaponin I, known as phytochrome inhibitor, during extraction, but the latter was not found in the free form in this plant.

9206-3784 Ulubelen, A., Topcu, G., Tan, N. , Lin, L.J., Cordell, C.A.(Faculty of Pharmacy, University of Istanbul, Beyazit, Istanbul, Turkey) **Microstegiol, a rearranged diterpene from Salvia microstegia.** *Phytochemistry*, v. 31(7): p. 2419-2421, 1992 (6 ref, Eng).

Microstegiol, a diterpene with a new carbon skeleton, was isolated from *s.microstegia*. Determination of the carbon framework and substitution pattern of the isolate was made by series of selective INEPT, COSY and NOE experiments, which also permitted the unambiguous assignment of the 13C NMR spectrum.

9206-3785 Vasanth, S., Kundu, A.B., Patra, A.(Captain Srinivasa Murti Drug Research Institute for Ayurveda, Arumbakkam, Madras 600106, TN, India) **Further oleanane triterpenoids from Vicoa indica.** *Journal of Natural Products*, v. 55(8): p. 1149-1151 , 1992 (8 ref, Eng).

Vicosigenin (C30H48O6; mp 252-54 degree C), new 28-nortriterpenoid, and vicoside B, new triterpenoid glucoside, were isolated from *V.indica*. Their structures were elucidated by spectral methods.

9206-3786 Velcheva, M.P., Petrova, R.R.* , Danghaaghiin, S., Yansanghiin, Z.(institute of Organic Chemistry with Centre of Phytochemistry, Bulgarian Academy of Sciences, 1040 Sofia, Bulgaria) **Structure of (-)-thalimonine.** *Journal of Natural Products*, v. 55(5): p. 679-680 , 1992 (3 ref, Eng).

Thalimonine (C21H23O5N) has been isolated from the aerial parts of Mongolian *T.simplex*. Its structure has been elucidated as (-)-3,4-methylenedioxy-2,8,9-trimethoxypavinane by spectral studies including 1H, 13C and NOe NMR and mass spectrometry.

9206-3787 Veleiro, A.S., Trocca, C.E., Burton, G., Oberti, J.C. (Departamento de Quimica organica, Facultad de Ciencias Exactas y Naturales, Universidad de Buenos Aires, Ciudad Universitaria, Pabellon 2, 1428 Buenos Aires, Argentina) **A phenolic withanolide from Jaborosa leucotricha.** *Phytochemistry*, v. 31(7): p. 2550-2551, 1992 (5 ref, Eng).

From leaves of *J.leucotricha* a new withanolide (20S,22R)-1,6beta,27-trihydroxy-19-norwitha-1,2,5(10), 24-tetraenolide has been isolated and fully characterized. The structure of this compound gives further insight into the metabolism of withanolides.

9206-3788 Venkata Rao, E.(Department of Pharmaceutical Sciences, Andhra University, Visakhapatnam 530 003, AP, India) **Chemical and biological aspects of select polysaccharides.** *Indian Journal of Pharmaceutical Sciences*, v. 54(3): p. 90-97, 1992 (78 ref, Eng).

An overview of chemical and biological aspects of select polysaccharides from natural sources is presented. General methods of isolation and structure elucidation are also included. Presence of galactomannans, water soluble polysaccharides in legumes and other plants is also reported.

9206-3789 Venkata Rao, E.(Department of Pharmaceutcal Sciences, Andhra University, Visakhapatnam 530 003, AP, India) **Chemical and biological aspects of select polysaccharides.** *Indian Journal of Pharmaceutical Sciences*, v. 54(3): p. 90-97, 1992 (78 ref, Eng).

Presence of galactomannans in *Cyamopsis tetragonolobus,Cerotonia siliqua, Trifolium pratense, T.repens, Medicago sativa, Sesbania aegyptica, S.grandiflora, S.speciosa, Trigonella foenum-graecum*; galactans in *Allium sativum, Dolichos lablab, Aloe barbadensis* and *Strychnos nux-vomica*; mannogalactans in *Strychnos potatorum* and polysaccharides in *Anacardium occidentale, Moringa oleifera, Azadirachta indica* and *Madhuca indica* has been reported.

9206-3790 Vieira, P.C., Kubo, I., Kujime, H. , Yamagiwa, Y., Kamikawa, T.(Division of Entomology and Parasitology, College of Natural Resources, University of California, Berkeley, California 94720,USA) **Molluscicidal acridone alkaloids from Angostura paniculata: isolation, structures, and synthesis.** *Journal of Natural Products*, v. 55(8): p. 1112-1117 , 1992 (12 ref, Eng).

Two novel acridone alkaloids, cuspanine (C17H17NO6; mp 164-66 degree C) and cusculine (mp 223-24 degree C), were isolated from the CH2Cl2 extract of *Angostura paniculata* leaves. Their structures were established as 1-hydroxy-2,3,5,6-tetramethoxy-9-acridone and 1,2,3,5,6-pentamethoxy-9-acridone respectively by means of spectroscopic studies. These structural assignments were confirmed by synthesis, using a direct metallation method as a key reaction. Both alkaloids exhibited moderate molluscicidal activity against an aquatic snail, Biomphalaria glabratta, and cytotoxicity against several types of carcinoma çell lines.

9206-3791 Williams, D.E., Sinclair, A.R.E. , Andersen, R. (Department of Chemistry and Oceanography, University of British Columbia, Vancouver, BC, Canada V6T 1Y6) **Triterpene constituents of the dwarf birch, Betula glandulosa.** *Phytochemistry*, v. 31(7): p. 2321-2324, 1992 (12 ref, Eng).

Juvenile stages of the dwarf birch, *B.glandulosa*, from the Yukon, Canada, are rarely browsed by snowshoe hares. Chemical investigation of extracts of *B.glandulosa* which strongly deter browsing by snowshoe hares has led to the isolation and structure determination of the new metabolite, deacetoxypapyriferic acid. Dammar-24-ene-12beta-O-acetyl-20(S)-ol-3-one, was obtained from extracts which did not deter browsing. The known metabolite papyriferic acid was found to be a minor constituent of extracts of *B.glandulosa*.

9206-3792 Woo, M.H., Do, J.C., Son, K.H.(College of Pharmacy, Hyasung Women's University, Hayang 313-702, Korea) **Five new spirostanol glycosides from the subterranean parts of Smilax sieboldii.** *Journal of Natural Products*, v. 55(8): p. 1129-1135 , 1992 (10 ref, Eng).

Five new steroidal saponins designated as smilaxin A (C38H60O18H20, mp 265-66 degree C), smilaxin B (C44H70O183H20; mp 270-72 degree C), smilaxin C (C44H70O172H20; mp 279-80 degree C), sieboldiin A (C44H70O19H20; mp 276-78 degree C) and sieboldiin B (C38H60OH14H20; mp 266-67 degree C) were elucidated as laxogenin 3-O-alpha-L arabinopyranosyl (1-6)-beta-D-glucopyranoside, laxogenin 3-O-beta-D-glucopyranosyl (1-4)-alpha-L-arabinopyranosyl (1-6)-beta-D-glucopyranoside, sienboldogenin 3-O-beta-D-gluco pyranoside, sieboldogenin 3-O-beta-D-glucopyranosyl (1-4)-{alpha-L-arabinopyranosyl (1-6)-beta-D-gluco pyranoside, and sieboldogenin 3-O-alpha-arabinopyranosyl (1-6)-beta-D-glucopyranoside respectively on the basis of chemical and spectral data.

9206-3793 Wu, T.S., Huang, S.C.(Department of Chemistry, National Cheng Kung University, Tainan, Taiwan, R.O.C) **Clausine-D and -F, two new 4-prenylcarbazole alkaloids from Clausena excavata.** *Chemical & Pharmaceutical Bulletin*, v. 40(4): p. 1069-1071, 1992 (8 ref, Eng).

Two new 4-prenylcarbazole alkaloids, clausine-D (C18H17NO2, mp 300 degrees) and -F (C19H19NO3, mp 200-02 degrees) were isolated from the stem bark of *C.excavata*. Their structures were elucidated by spectral methods. Both of clausine-D and -F showed significant antiplatelet aggregation activity.

9206-3794 Wu, D.G., Cheng, C.Q., Liu, J.K.(Department of Chemistry, Zhongshan University, Guangzhou, People's Republic of China) **X-ray crystal structure of angulatusine A, a new sesquiterpene alkaloid from Celastrus angulatus.** *Journal of Natural Products*, v. 55(7): p. 982-985 , 1992 (4 ref, Eng).

A new sesquiterpene alkaloid, angulatusine A, has been isolated from the seeds of *C.angulatus*(Celastraceae). The structure was determined using physical and spectral techniques and X-ray crystallography.

9206-3795 Xu, J.P., Xu, R.S.(Shanghai Institute of Materia Medica, Academia Sinica, Shanghai 200031, China) **Cycloartane-type sapogenins and their glycosides from Curculigo orchioides.** *Phytochemistry*, v. 31(7): p. 2455-2458, 1992 (6 ref, Eng).

Several new cycloartane glycosides were isolated from rhizomes of *Curculigo orchioides*. Among them, two new triterpenoids saponenins named curculigenin B and C, which are common to three saponins, were formulated as (24S)-3beta, 11alpha, 16beta, 24-tetrahydroxycycloartane and 3beta, 11alpha, 16beta-trihydroxycycloartane-24(25)-en, respectively, by 1H, 13CNMR, 2DNMR analysis and chemical evidence. The structures of curculigosaponin K,L and M were elucidated on the basis of chemical methods and spectral data.

9206-3796 Xu,J.P., Xu,R.S., Luo,Z. , Dong,J.Y., Hu,H.M. (Shanghai Institute of Materia Medica, Academia Sinica, Shanghai 200031, China) **Mussaendosides M and N, new saponins from Mussaenda pubescens.** *Journal of Natural Products*, v. 55(8): p. 1124-1128 , 1992 (8 ref, Eng).

Two new cycloartane-type triterpenoidal saponins, named mussaendosides M (C59H93NO21; mp 178 degree C) and N (C65H103NO26; mp 194 degree C), were isolated from whole plants of *M.pubescens*. Their structures were determined by 2D nmr techniques, such as TOCSY, HMQC, HMBC, and ROESY, and chemical evidence.

9206-3797 Yi, Y.H.(School of Pharmacy, Second Military Medical University, 101 Guo He Road, Shanghai 200 433, People's Republic of China) **A triterpenoid saponin from Phytolacca esculenta.** *Phytochemistry*, v. 31(7): p. 2552-2554, 1992 (6 ref, Eng).

A new triterpenoid saponin, 3-O-{beta-D-glucopyranosyl(1-4)-beta-D-xylopyranosyl}-28-O-beta-D-glu copyranosyl-30-methyloleanate-9(11), 12-dien-2,3,23-trihydroxyl-28-oic acid, was isolated from the roots of *P.esculenta*. The structure was assigned by chemical methods and spectral analysis.

9206-3798 Yoshida, T., Nakata, F., Hosotani, K., Nitta, A., Okuda, T.*(Faculty of Pharmaceutical Sciences, Okayama University, Tsushima, Okayama 700, Japan) **Dimeric hydrolysable tannins from Melastoma malabathricum.** *Phytochemistry*, v. 31(8): p. 2829-2833, 1992 (19 ref, Eng).

Three new hydrolysable tannin dimers, malabathrins B,C and D, and 11 known tannins including three dimers (nobotanins B,G and H) and a trimer (nobotanin J), have been isolated from the leaves of *M.malabathricum*. The structures of new dimers were determined by spectral analysis and chemical correlations with nobotanins B and J.

9206-3799 Zachariah, T.J., Nirmal Babu, K.(National Research Centre for Spices P B No.1701, Calicut 673 012, Kerala, India) **Effect of storage of fresh turmeric rhizomes on oleoresin and curcumin contents.** *Journal of Spices and Aromatic Crops*, v. 1(1): p. 55-58 , 1992 (7 ref, Eng).

The turmeric (*Curcuma longa*) varieties Suvarna (PCT-8), Suguna (PCT-13) and Sudarshana (PCT-14), were harvested and stored for a period of nine months. Samples were analysed for curcumin and oleoresin at monthly intervals. Curcumin and oleoresin levels were not affected by storage. The marginal increase in these constituents after sprouting is only relative as the nutrients like carbohydrates get progressively depleted with the progress of sprouting and growth of the sprout. The distribution of curcumin in mother rhizomes and fingers are also discussed.

Chemotaxonomy

9206-3800 Bandara, B.M.R., Wimalasiri, W.R. , Wickremasinghe, W.A., Bandara, K.A.N.(Department of Chemistry, University of Peradeniya, Peradeniya, Sri Lanka) **Cyperenoic acid and (-)-hardwickiic acid from the chloroform extract of the roots of Croton aromaticus: Isolation and insecticidal properties.** *Journal of National Science Council, Sri Lanka*, v. 18(2): p. 119-126, 1990 (21 ref, Eng).

Cyperenoic acid and (-)-hardwickiic acid have been isolated from the chloroform extract of the roots of *C.aromaticus*. Both compounds displayed moderate insecticidal activity against the groundnut aphid *Aphis craccivora* comparison of antifungal and insecticidal properties exhibited by the extracts of *C.aromaticus* and *C.lacciferus* corroborates previous conclusions of chemotaxonomic studies that the two taxa be maintained as two distinct species.

9206-3801 Bisset, N.G.(Pharmacology Research Laboratories, Chelsea Department of Pharmacy, King's Collage, London University of London, Manresa Road, London, SW36QX, UK) **Uses, chemistry and pharmacology of Malouetia (Apocynaceae subf. Apocynoideae).** *Journal of Ethnopharmacology*, v. 36(1): p. 43, 1992 (42 ref, Eng).

An outline of the uses, chemistry and pharmacology of the south American and African genus Malouetia is given. The chemotaxonomy of the genus is also disucssed.

9206-3802 Kelley, R.B,, Seiber, J.N.(Department of Environmental Toxicology, University of California, Davis, CA 95616 USA) **Pyrrolizidine alkaloids chemosystematics in Amsinckia.** *Phytochemistry*, v. 31(7): p. 2369-2387, 1992 (71 ref, Eng).

The distribution and quantitation of pyrrolizidine alkaloids (PAs) within the genus Amsinckia, Boraginaceae, was established by GC-mass spectrometric techniques.

Twenty-eight PAs were structurally characterized from 55 samples representing 12 of the 14 known species. The chemosystematic significance of these results suggest that PAs can be used to distinguish sectional differences that are accompanied by chromosomal rearrangements, but not specific differences. The sectional placement of *A.grandiflora* is clarified supporting a propsosed reinstatement of section Vernicosae, sens, str., and reducing the number of species belonging to section Tessellatae, sens, str., to three.

9206-3803 Mathela, C.S., Melkani, A.B., Bisht, A.K., Pant, A.K., Bestmann, H.J., Erler, J. , Kobold, U., Rauscher, J., Vostrowsky, O. (Department of Chemistry, Kumaun University, Nainital, UP, India) **Chemical varieties of essential oils from Elsholtzia polystachya from two different locations in India.** *Planta Medica*, v. 58(4): p. 376-379, 1992 (12 ref, Eng).

Capillary GC, GC-MS, IR, 1H-and 13C-NMR studies of the essential oil from the leaves and cones of *E.polystachya* collected from two different locations in India revealed that one oil contained 1,8,-cineol (37.3 percent), the other one perillene (61.2 percent) as the main constituents.

9206-3804 Nowak, G.(Department of Medicinal Plants, Academy of Medicine, Faculty of Pharmacy, Mazowiecka 33, 60-623 Poznan, Poland) **A chemotaxonomic study of sesquiterpene lactones from subtribe Centaureinae of the Compositae.** *Phytochemistry*, v. 31(7): 2363-2368, 1992 (32 ref, Eng).

A survey of the pattern of 34 sesquiterpene lactones in24 species belonging to the genera *Centaurea, Chartolepis,Leuzea, Psephellus, Stizolophus* and *Zoegea* provides furtherinformation on the relationships within the mentioned taxa.The species of genera *Chartolepis, Psephellus* and *Centaurea* subg. *Hyalinella* have been shown to be chemically distinct.

9206-3805 Rashid, M.A., Gray, A.I., Waterman, P.G., Armstrong, J.A.(Phytochemistry Research Laboratoires, Department of Pharmaceutical Sciences, University of Strattclyde, Glasgow G1 1XW, Scotland, UK) **Coumarins from Phebalium tuberculosum ssp. megaphyllum and Phebalium filifolium.** *Journal of Natural Products*, v. 55(5): p. 851-858 , 1992 (17 ref, Eng).

A total of 14 coumarins have been isolated from the aerial parts *P.tuberculosum* ssp. *megaphyllum* and 9 from *P.filifolium*. Three of the coumarins obtained from *P.tuberculosum* ssp.*megaphyllum* are novel and have been characterized, on the basis of spectroscopic analysis, as (E)-7-(6-hydroperoxy-3,7-dimethylocta-27-dienyloxy) coumarin, (E)-8-(6-hydroperoxy-3,7-dimethylocta-2,7-dienyloxy) psoralen and (E,E)-8(7-hydroxy-3,7-dimethylocta-2,5-dienyloxy) psoralen. In addition , both species yielded the simple acetophenone xanthoxylin, and *P.tuberculosum* ssp. *megaphyllum* gave (E) betulin-3-p-coumarate and (Z)-betulin-3-p-Coumarate, both of which appear to be novel. The chemotaxonomic implications of coumarin distribution in the two species are discussed.

9206-3806 Reynaud, J., Jay, M., Blaise, S.(Laboratoire de Botanique et Biologie Cellulaire, Institut des Sciences Pharmaceutiques et Biologiques, Universite Lyon 1, 8 Avenue Rockefeller, 699373 Lyon CEDEX 08, France) **Evolution and differentation of populations of Lotus corniculatus S.I. (Fabaceae) from the southern French Alps (Massif du Ventoux and montagne de Lure).** *Canadian Journal of Botany*, v. 69(10): p. 2286-2290 , 1991 (23 ref, Eng, Fre).

A chemical analysis of the polyphenolic patterns of diploid and tetraploid populoid populations of *L.corniculatus* growing in the southern French Alps showed that diploids from Mont Ventoux and from Montagne de Lure belong to the same chemotype. On the other hand, tetraploids showed two different chemotypes. This paper suggests that the diploids could be derived from a relic diploid population scattered by glaciation and restricted within very narrow areas, whereas the tetraploids originating from the diploids were more competative and radiated into larger areas cleared from ice.

9206-3807 Varma, S.K., Singh, B.P., Jha, R.R.(Bhagalpur University Herbarium, University Department of Botany, Bhagalpur 812007, Bihar, India) **Chemotaxonomy of genus Paspalum L..** *Journal of Economic and Taxonomic Botany*, v. 15(3): p. 725-727, 1991 (5 ref, Eng).

Leaf flavonoids of three species of *Paspalum* viz., *P.paspaloides, P.scrobiculatum* and *P.vaginatum* have been discussed with a view to judge the taxonomic status.

Ethnomedicine

9206-3808 Abebe, W.(School of Medicine, Allergic Disease Centre Creighton University, California at 24th St. Omaha, NE 68178 USA) **Adverse effects of traditional drug preparation.** *Journal of Ethnopharmacology*, v. 36(1): p. 93-94 , 1992 (2 ref (Letter to the editor), Eng).

Letter describes the adverse effects of some of the traditonally used drugs information was gathered from the traditional practioners of Gondar region Ethiopia , which should be taken into consideration by concerned users.

9205-3809 Aminuddin, Girach, R.D.(Survey of Medicinal Plants Unit, Regional Research Institute of Unani Medicine, Bhadrak 756100, Orissa, India) **Pluralistic folk uses of**

Hemidesmus indicus (L.) R.Br. from south eastern India. *Journal of Economic and Taxonomic Botany*, v. 15(3): p. 715-718, 1991 (10 ref, Eng).

H.indicus, a twining shrub belonging to the family Asclepiadaceae, is a common medicinal plant and is used in indigenous system of medicine including Unani Tib for skin disease, fever, diarrhoea, rheumatism, snake bite etc. Less known or unreported pluralistic uses of this plant recorded from the tribal and rural societies of Bihar and Orissa during the survey of medicinal plants reported in the present manuscript with the view to establish genuinity of the claims using scientific parameters.

9206-3810 Aminuddin, R.D.G., Khan, S.A.(Survey of Medicinal Plants Unit, Regional Research Institute of Unani Medicine, Bhadrak 756 100, India) **Ethnomedicinal uses of Achyranthes aspera L. in Orissa (India).** *International Journal of Pharmacognosy*, v. 30(2): p. 113-115, 1992 (9 ref, Eng).

Achyranthes aspera is one of the ethanodrugs employed by the tribes of Orissa for the treatment of reproduction related disorders, dental problems, diarrhea, bone fracture, cuts, boils, folk uses of the plant has also been described.

9206-3811 Aswal, B.S.(Botany Division, Central Drug Research Institute, Lucknow, UP, India) **Less known medicinal uses of three plants from Kumaon Himalaya (India).** *Indian Journal of Forestry*, v. 15(1): p. 76-77, 1992 (11 ref, Eng).

Habit, ecology and medicinal uses of *Inula cappa*, *Pogostemon benghalense* and *Woodfordia fruticosa* collected from Patwadanger village of Nainital district have been described.

9206-3812 Basu, P., Mitra, B.(Botanical Survey of India, Howrah 711 103, WB, India) **Less known noteworthy plants of Sikkim Himalaya.** *Journal of Economic and Taxonomic Botany*, v. 16(1): p. 209-212, 1992 (5 ref, Eng).

Less known thirteen noteworthy plants belonging to eight families available under the natural ecosystem of different altitudes of Sikkim have been enlisted.

9206-3813 Bhattarai, N.K.(Deputy Scientific Officer, National Herbarium and Plant Laboratories, Department of Forestry and Plant Research, G.P.O. Box 938, Kathmandu, Nepal) **Folk anthelmintic drugs of central Nepal.** *International Journal of Pharmacognosy*, v. 30(2): p. 145-150, 1992 (2 ref, Eng).

In rural societies of central Nepal, due to the lack of modern health services and facilities, herbal preparations are still the dominant methods of therapy for intestinal parasitic disorders. information on the empirically accepted and frequently used anthelmintic properties of 39 plant species with additives has been given along with dosages and mode of administration.

9206-3814 Bourdy, G., Cabalion, P., Amade, P. , Laurent, D. (Laborataire de pharmacologie Centre ORSTOM B-P A5, Noumea, New Caledonia) **Traditional medicine used in the Western Pacific for the treatment of ciguatera poisoning.** *Journal of Ethnopharmacology*, v. 36(2): p. 163-174 , 1992 (38 ref, Eng).

A list of plants used in treating ciguatera (a type of food poisoning associated with the ingestion of tropical fish) Poisoning is presented with emphasis on species whose extract utilization (part of plant used, preparation, dosage) has been determined.

9206-3815 Changkija, S., Kumar, Y.(Department of Botany, North-Eastern Hill University, Shillong 793014, Meghalaya, India) **Panax schinseng Nees (Araliaceae): A new distributional record for India.** *Indian Journal of Forestry*, v. 15(1): p. 85-87, 1992 (10 ref, Eng).

Botanical description, habitat, distribution and conservation of *P.schinseng* collected from Nagaland and reported for the first time from India, have been described.

9206-3816 Gopal, G.V.(Department of Life Science, Regional College of Education, Bhubaneswar 751 007, Orissa, India) **"Kauncha beej" an ingredient of "Vitaex"- its botany, chemistry and folklore uses in Orissa.** *Journal of Economic and Taxonomic Botany*, v. 15(3): p. 677-682, 1991 (8 ref, Eng).

Botany, chemistry and folklore uses of "Kauncha Beej" *Mucuna pruriens* have been enumerated. Phytotherapy and phytochemical investigations of flavonoids, steroids, coumarins and cardenolides have also been discussed.

9206-3817 Heyndrickx, G., Brioen, P. , Puyvelde, L.V.(Centre de Recherche sur la Pharmacopee et la Medecine Traditionanelle-CURPHAMETRA, Institute de-Recherche Scientifique et Technologique-I.R.S.T., B.P. 227, Butare (Rwanda)) **Study of Rwandese medicinal plants used in the treatment of sabies.** *Journal of Ethnopharmacology*, v. 35(3): p. 259-262 , 1992 (8 ref, Eng).

In order to find new anti-scabies agents, a series of fifteen medicinal plants used in the Rwandese traditional medicine to treat scabies were screened. Heteromorpha trifoliata leaf extract and root extracts of *Psorospermum febrifugum*,*Pentas longiflora* and *Neorautanenia mitis* showed anti-scabies activity in the increasing order.

9206-3818 Kaul, M.K., Sharma, P.K., Singh, V.(Regional Research Laboratory (Branch), Sanat Nagar, Srinagar, Kashmir, India) **Ethnobotanical studies in northwest and trans-Himalaya VI. Contribution to the ethnobotany of basohli-bani region, J & K, India.** *Bulletin Botanical Survey of India*, v. 31(1-4): p. 89-94 , 1989 (18 ref, Eng).

The article deals with some aspects of ethnobotany of "Pahari" community living in Basohli-Bani region of Jammu and Kashmir State. The uses of 39 plant species are recorded in this communication. Yams are of common occurrence in this region and are reputed not only as edible but also in home remedies against swellings due to sprains or wounds. The medicinal uses of *Rosularia alpestris* and *Tiburnum grandiflorum* are reported for the first time.

9206-3819 Mahunnah, R.L.A.(Traditional Medicine Research Unit, Muhimbili Medical Centre, PO Box 65120, Dar es Salaam, Tanzania) **Some medicinal plants of southern highlands of Tanzania.** *Journal of Economic and Taxonomic Botany*, v. 15(3): p. 557-563, 1991 (13 ref, Eng).

Fourty-four medicinal plants belonging to 39 genera and 21 families used by the Hehe and Safwa tribes of Southern highlands of Tanzania are presented. Information with regard to the traditional medicinal uses of the plants by the two tribes are discussed.

9206-3820 Nath, D., Sethi, N., Singh, R.K. , Jain, A.K.(Division of Toxicology, Central Drug Research Institute, PB No. 173, Lucknow 226001, UP, India) **Commonly used Indian abortifacient plants with special reference to their teratologic effects in rats.** *Journal of Ethnopharmacology*, v. 36(2): p. 147-154 , 1992 (24 ref, Eng).

During the survey of two towns of Uttar Pradesh (Lucknow and Farrukhabad) the common folk medicine plants used, by women were recorded and Ayurvedic and Unani drug encyclopedias were consulted for antireproductive potential of these plants. Aqueous or 99 percent ethanol extracts of the important plants were given orally to rats for 10 days after insemination with special reference to effects on foetal development. Leaf extracts of *Moringa oleifera* and *Adhatoda vasica* were 100 percent abortive at doses equivalent to 175 mg/kg of starting dry material. Only the flowers of *Acacia arabica* with and *Hibiscus rosa-sinensis* appeared to lack teratologic potential at the doses tested.

9206-3821 Nicoletti, M., Galeffi, C., Messana, I., Marini-Bettulo, G.B.(Departimento di Biologia Vegetale, Universita La Sapienza, P. le Aldo Moro 500185, Rome, Italy) **Hypoxidaceae, medicinal uses and the norlignan constituents.** *Journal of Ethnopharmacology*, v. 36(2): p. 95-101 , 1992 (56 ref, Eng).

Glycosides of uncommon aglucones, characterized by the Ph-C5-Ph skeleton, were isolated from the rhizomes of some African Hypoxis species. HPLC analysis indicated the occurrence of these compounds in other Hypoxidaceae. On the basis of structural evidence and biogenetic considerations the aglucones of these glycosides can be considered as norlignan, derived from the union of two phenylpropanoid units in positions alpha, beta or gamma and with the loss of the terminal carbon of a chain. Several *Hypoxis* species are used in traditional medicine as antiinflammatory and antitumor drugs and recently a preparation based on lipophilic extracts of *H.rooperi* have been introduced into the market for the treatment of prostatic hypertrophy.

9206-3822 Sharma, M.P., Ahmad, J., Hussain, A., Khan, S.(Botany Department, Hamdard Univesity, Hamdard Nagar, New Delhi 110 062, India) **Folklore medicinal plants of Mewat, Gurgaon district, Haryana, India.** *International Journal of Pharmacognosy*, v. 30(2): p. 129-134, 1992 (9 ref, Eng).

Forty eight plants used by the Meo community of Gurgaon district for the treatment of ailments of men and animals have been listed. The ingredients used in preparation and mode of administration of each treatment are also reported. The information on plants and their therapeutic uses was gathered from the local medicine men, 'Hakim', nomadic shepherds and older persons of the area.

9206-3823 Sharma, N.K.(Department of Botany, Govt. College, Jhalawar 326001, Rajasthan, India) **On the ethnobotany of Solanum surattense Burm. f. from Mukundaras (S.E. Rajasthan).** *Journal of Economic and Taxonomic Botany*, v. 15(3): p. 613-615, 1991 (7 ref, Eng).

S.surattense, a straggling, diffuse and spiny herb belonging to family Solanaceae is commonly found in drier parts of Rajasthan State. This plant is also of common occurrence in the sandy and gravelly fallow fields, roadsides, and wastelands, of the area and commonly known as Bhatta kateli or Baingan kateli. Its root paste is utilized as a plant drug for the treatment of Hernia disease by the tribals of the area. Disease symptoms, mode of application of the plant drug, precautions and other ethnobotanical uses of the species are described.

9206-3824 Srivastava, T.N., Kapahi, B.K.(Regional Research Laboratory, Canal Road, Jammu Tawi 180 001, JK, India) **Medicinal and aromatic plant resources of Sikkim Himalaya.** *Journal of Economic and Taxonomic Botany*, v. 16(1): p. 1-17, 1992 (11 ref, Eng).

Latest nomenclature, proper identity of the plants, local names, families, frequency/abundance and active constituents of 280 plant species belonging to 207 genera and 92 families explored from Sikkim Himalayan region have been enlisted.

9206-3825 Unander, D.W., Webster, G.L. , Blumberg, B.S.(Division of population Science, Fox Chase Cancer Centre, 7701 Burpholme Avenue, Philadelphia, PA 19111, USA) **Useage and bioassays in Phyllanthus (Euphorbiaceae): A compilation III. The subgenera Eriococcus, Conami Gomphidium, Botryanthus, Xylophylla and a complete list of the species cited in the three part series.** *Journal of Ethnopharmacology*, v. 36(2): p. 103-112 , 1992 (67 ref, Eng).

This review third in series, devoted to the ethnomedical aspects of *Phyllanthus*. An attempt has been made to review all the available ethnomedical data and laboratory results and organise them by current infrageneric taxonomic classification. The classification of confusing citations and taxonomic relations among the *Phyllanthus* species used medicinally was also envisioned. All the records of traditional uses or laboratory assay are covered for the genera mentioned in the title and a complete list of the species cited in the three part series; arranged by their infrageneric taxa. Information regarding the specific location or ethnic group plant parts, method of preparation, specific uses and references are provided.

9206-3826 Zamora-Martinez, M.C., de Pascual Pola, C.N.(Centro de Investigaciones Forestales y Agropecuarias del Distrito Federal, INIFAP, Progreso No. 5, Viveros de Coyoacan 04110, Mexico DF, Mexico) **Medicinal plants used in some rural populations of Oaxaca, Puebla and Veracruz, Mexico.** *Journal of Ethnopharmacology*, v. 35(3): p. 229-257 , 1992 (20 ref, Eng).

Results of an ethnobotanical study carried out in 57 rural populations from the Mexican states of Oaxaca, Veracruz and Puebla are presented. The most relevant results were; the taxonomic determination of 237 vegetal species from which 399 curative products are obtained, in order to combat 57 illnesses, the most frequent of which are those related to the digestive system, the skin, the reproductive system and those of supernatural origin, which can only be treated by the use of plants in special ceremonies known as 'limpias', due to their peculiar condition.

Analytical & Processing Techniques

9206-3827 Balakrishna, K., Vasanth, S. , Suganthan, J., Rao, R.B., Omer, M.M.F. , Govindarajan, S.(Captain Srinivasa Murti Drug Research Institute for Ayurveda, Arumbakkam, Madras 600106, TN, India) **Estimation of the total alkaloidal content in various parts of Solanum trilobatum Linn.** *Indian Drugs*, v. 29(11): p. 509-510, 1992 (11 ref, Eng).

Estimation of total alkaloidal content as solasodine in various parts of *S.trilobatum* using Birner's method with some modifications has been reported. The leaves and berries were found to contain the highest and lowest amount of alkaloids respectively. The method used has been reported to be rapid simple and more accurate than Birner's method.

9206-3828 Christakopoulos, A., Feldhusen, K. , Norin, H., Palmqvist, A., Wahlberg, I.(Reserca AB, S-11884 Stockholm, Sweden) **Determination of natural levels of coumarin in different types of tobacco using a mass fragmentographic method.** *Journal of Agricultural and Food Chemistry*, v. 40(8): p. 1358-1361, 1992 (27 ref, Eng).

An accurate analytical method for qualitative and quantitative determination of endogenous coumarin in tobacco has been developed. Coumarin (1,2-benzo-pyrone) is extracted from the tobacco, and the extract obtained is purified by using high-pressure liquid chromatography or thin-layer chromatography. The quantification is performed by gas chromatography-mass spectrometry using a selected ion monitoring technique and 13C-labeled coumarin as internal standard. The detection limit of the method is 0.050 micro g of coumarin/g of tobacco. Coumarin was estimated in a number of different tobacco types. The concentrations were generally below 1 micro/g of tobacco. In fire-cured tobacco , however, the concentration varies between 1.1 and 4.7 micro g/g.

9206-3829 Davies, A.J., Mazza, G.(Department of Food Science, University of Manitoba, Winnipeg, Manitoba, Canada R3T 2N2) **Separation and characterization of anthocyanins of Monarda fistulosa by high-performance liquid chromatography.** *Journal of Agricultural and Food Chemistry*, v. 40(8): p. 1341-1345, 1992 (19 ref, Eng).

Anthocyanins and other flavonoids in the petals of *Monarda fistulosa* (bee balm) were separated on a reversed-phase column by high-performance liquid chromatography. Detection at 280 and 510 nm revealed the presence of 16 discrete peaks including five anthocyanin pigments. The total anthocyanin concentration was 214.8mg/ 100g of fresh petals. The main anthocyanin was pelargonidin 3,5-diglucoside acylated with coumaric and malonic acids, which accounted for 81 percent of the total anthocyanin content and 17 percent of the total flavonoid content. Other flavonoids included flavone and apigenin 7-O-glucosides, 5-hydroxyflavone, and a dihydroxyflavone 8-C-glucoside.

9206-3830 Hashimoto, K., Yasuda, T., Ohsawa, K.(Tohoku College of Pharmacy, 4-1 Komatsushima 4 Chome, Aoba-ku, Sendai, Miyagi 981, Japan) **Determination of synephrine in oriental pharmaceutical decoctions containing Aurantii nobilis pericarpium by ion-pair high-performance liquid chromatography.** *Yakugaku Zasshi*, v. 112(5): p. 327-331, 1992 (9 ref, Eng).

A simple method using ion-pair high-performance liquid chromatography was established for the rapid and precise determination of synephrine in oriental pharmaceutical decoctions containing Aurantii Nobilis Pericarpium. An ODS coloumn and a mixture of water, acetonitrile, sodium dodecyl sulfate and phosphoric acid (65:35:0.5:0.1) as a mobile phase were used for the separation. Synephrine was eluted without interference by other co-existing components within 15 min.

9206-3831 Hilton, B.D., NChmurny, G.N. , Muschik, G.M.(Program Resources. Inc./Dyn Corp, NC-1 Freederick Cancer Research and Development Center, P.O.Box B, Frederick, Maryland 21702, USA) **Taxol: Quantitative internuclear proton-proton distances in CDCl3solution from nOe data: 2D NMR ROESY buildup rates at 500 MHZ.** *Journal of Natural Products*, v. 55(8): p. 1157-1161 , 1992 (15 ref, Eng).

Quantitative nmr internuclear proton-proton distance measurements obtained by observation of the initial buildup rates of nOe's in 2D ROESY spectra of taxol in CDCl3 are reported. A comparison to the X-ray crystal structure of taxotere is made, and the results are discussed in terms of previous studies of structure-activity relationships.

9206-3832 Homatidou, V.I., Karvouni, S.S. , Dourtoglou, V.G., Poulos, C.N.(Department of Analytical Chemistry, Viltanioti Str., 14564 Kifissia, Athens, Greece) **Determination of total volatile components of Cucumis melo L. variety cantaloupensis.** *Journal of Agricultural and Food Chemistry*, v. 40(8): p.-1385-1388, 1992 (8 ref, Eng).

The volatiles (Melon aroma) of organe-fleshed *C.melo* var. Cantaloupensis were studied using the Freon II extraction method and a combination of multidimensional gas chromatography (MDGC) and a gas chromatography-mass spectrometry (GCMS). The total profile of identified compounds is reported including the sulfur components that play an important role in the overall aroma profile of melo fruit according to the sniffing port analysis.

9206-3833 Julkunen Tiitto, R., Gebhardt, K.(Department of Biology, University of Joensuu, Box 111, SF 80101, Joensuu 10, Finland) **Further studies on drying willow (Salix) twings: The effect of low drying temperature on labile phenolics.** *Planta Medica*, v. 58(4): p. 385-386, 1992 (3 ref, Eng).

For salicortin and tremulacin the most suitable drying is performed by the use of a drying system which keeps the process air at 10 percent relative humidity and at temperature of 5 or 20 degree C, respectively for an initial period of 40 hours. the drying is described. Willow *Salix spp* phenolics are significantly protected from serious decomposition of the temperature does not exceed about 22 degree C during the drying process.

9206-3834 Mancini, M.A.D., Hanai, L.W.(Departamento de Farmacos e Medicamentos-Faculdade de Ciencias Farmaceuticas - UNESP-14800-Araraquara-SP, Brasil) **Identification of essential oils or isolated compounds in pharmaceutical preparations Part 1 - Ointment and suppository.** *Revista de Ciencias Farmaceuticas*, v. 13: p. 9-21 , 1991 (15 ref, Spa, Eng).

A thin layer chromatographic method used to determine essential oils and their constituents such as thymol, menthol etc. in semisolid pharmaceutical preparations has been described.

9206-3835 Momma, N., Ueda, j., Osawa, K.(Tohoka College of Pharmacy, 4-1 Komatsushima 4-chome, Aoba-ku, Sendai 981, Japan) **Determination of Sennoside A in oriental pharmaceutical decoctions containing rhei rhizoma by ion-pair high-performance liquid chromatography.** *Yakugaku Zasshi*, v. 112(4): p. 272-275, 1992 (4 ref, Eng).

A simple method using ion-pair high-performance liquid chromatography was established for the rapid and precise determination of sennoside A in oriental pharmaceutical decoctions containing Rhei rhizoma. This method was compared with other two methods, i.e. ion-suppression and phosphate buffer methods. Sennoside A was eluted without interference in this ion-pair method while the determination of sennoside A was interfered by co-existing components in the other two methods.

9206-3836 Rogan, G.J., Ream, J.E., Berberich, S.A., Fuchs, R.L. (Plant Science Technology, Monsanto Agricultural Comapny, 700 Chesterfield Village Parkway, St.Louis, Missouri 63198, USA) **Enzyme-linked immunosorbent assay for quantitation of neomycin phosphotransferase II in genetically modified cotton tissue extracts.** *Journal of Agricultural and Food Chemistry*, v. 40(8): p. 1453-1458, 1992 (25 ref, Eng).

A double antibody sandwich enzyme-linked immunosorbent assay (ELISA) was developed and validated to accurately quantitate neomycine phosphotransferase II (NPTII) levels in genetically modified cotton seed and leaf tissue. Parallelism studies using purified bacterially-expressed NPTII and plant-expressed NPTII in the ELISA established that these proteins are immunologically and conformationally equivalent. Data on sensitivity, accuracy, and precision substantiated the utility of this ELISA for analysis of NPTII in genetically modified plant tissue. NPTII was extracted from cotton tissue using an aqueous buffer providing maximum recovery of NPTII and minimizing tissue interference. Expresion levels of NPTII measured in three different genetically modified cotton lines ranged from 0.040 to 0.044 percent and from 0.009 to 0.019 percent of extractable protein for leaf and seed extracts, respectively.

9206-3837 Sakata, I., Ikeuchi, M., Maruyama, I., Okuda, T.(Toyo Hakka Kogyo Company Limited, Satosho-cho, Asakuchi-gun, Okayama 719-03, Japan) **Quantitative analysis of (-)-epigallocatechin gallate in tea leaves by high-performance liquid.** *Yakugaku Zasshi*, v. 111(12): p. 790-793, 1991 (9 ref, Eng).

The quantitative analysis of (-)-epigallocatechin gullate (EGCG) in *Camellia sinensis* was performed by HPLC with a C-18 reversed-phase column. The largest amount of EGCG was obtained from matsuchea kind of green tea, by the extractiion method, or from sencha kind by the infusiion method. Further more EGCG contents in various parts of the tea plant were examined. The first leaf had the highest concentration of EGCG decreased with the aging of the leaf.

9206-3838 Saxena, R.B., Dholakia, M.V.(Drug Standardisation Research Project, C.C.R.A.S. Dhanvantri Mandir, Jamnagar-361008, India) **Study of Dashmula taila by degree of splitting method.** *Journal of Research and Education in Indian Medicine*, v. 11(2): p. 35-36, 1992 (4 ref, Eng).

Old tailas are better for the special diseases, according to the ancient books of Ayurveda. The hydrolysis of glycerides has been studied by degree of splitting method of Dashmula taila, when it was packed in glass bottles and plastic containers. Glass light packing is found to be better than other packings by degree of splitting method.

9206-3839 Schmidt, P.C., Vogel, K.(Institut fur Chemie und Pharmazie, Lehrstuhl fur Pharmazeutische Technologie, Aufder Morgenstelle 8,7400 Tubingen, Germany) **(Camomile-Evaluation of the stabilities of camomile preparation).** *Deutsche Apotheker Zeitung*, v. 132(10): p. 462-468 , 1992 (22 ref, Eng, Ger).

Only title translated.

9206-3840 Wilson, L.A., Senechal, N.P. , Widrlechner, M.P. (Department of Food Science, Agricultural Research Service, U.S.Department of Agriculture, Iowa State University, Ames, Iowa 50011,USA) **Headspace analysis of the volatile oils of Agastache.** *Journal of Agricultural and Food Chemistry*, v. 40(8): p. 1362-1366, 1992 (27 ref, Eng).

Equilibrium headspace analysis in combination with gas chromatography/mass spectroscopy was used to identifiy volatile compounds released by the inflorescences and leaves from individual plants of *Agastache foeniulum*,*A.rugosa* and putative hybrids. Methylchavicol was the major constituents in most populations tested. The inflorescences produced from 2 to 6 times more volatiles per gram than did the leaves. *A.rugosa* produced more volatiles than did *A.foeniculum* and had less diversity in its volatile composition..

Miscellaneous

9206-3841 . (Cumin oil). *Deutsche Apotheker Zeitung*, v. 132(9): p. 415-416 , 1992 (Ger).

A brief monograph on essential oil of *Carum carvi* has been given.

9206-3842 . (Cortex Frangula- a monograph). *Deutsche Apotheker Zeitung*, v. 132(3): p. 70-72 , 1992 (Eng, Ger).

Only title translated.

9206-3843 Becela-Deller, C.(Lehrstuhl fur Pharmazeutische Biologie der Universitat, Mittlerer Dallenberg weg 64,8700 Wurzburg, Federal Republic of Germany) **Ruta graveolens- a medicinal plant between science and magic.** *Deutsche Apotheker Zeitung*, v. 131(51/52): p. 2705-2709 , 1991 (30 ref, Eng).

Only title translated.

9206-3844 Ezema, D.O., Ozioko, P.O.(Department of Pharmaceutics, University of Nigeria, Nsukka, Nigeria) **Butyrospermum lipids as an ointment base.** *International Journal of Pharmacognosy*, v. 30(2): p. 117-123, 1990 (11 ref, Eng).

Ointment base formulations using butter tree *B.paradoxum* fats were stored at various temperature conditions and their rheological properties evaluated. The rheological properties of the base in comparison with other well known ointment bases established its suitability as a medicament for topical applications.

9206-3845 Hamarneh, S.K.(4361 Mass. Avenue, New Washington, DC 20016-2361, USA) **Spices in Medieval Islam : A perspective.** *Hamdard Medicus*, v. 35(2): p. 82-90, 1992 (28 ref, Eng).

Ancient Arabian spice trade, during Greek, Roman and Islamic Empire, its further development under the caliphs, decline of Arabian influence and uses of spices and drug plants have been presented. The spices were introduced by the Arabs, who in turn imported these from China, India, East Indies or Persia. Some of these are camphor, galanga-root, benzoin, nutmeg, senna, cubeba, tamarindus, nux-vomica, senna, wormseed and sandalwood.

9206-3846 Heinrich, M., Antonio, N., Kuhnt, M.(Institut fur Pharmazeutische Biologie, Schanzlestrasse 1,7800 Freiburg, Germany) (**Medicinal plants in Mexico-Market of Matias Romero (Oaxaca)).** *Deutsche Apotheker Zeitung*, v. 132(8): p. 351-357 , 1992 (18 ref, Eng, Ger).

Mexican markets are of relevance to Indians and Mestizos alike. Seventy four medicinal plants of a market in the city of Matias Romero (Oaxaca) have been documented and out of them 67 have been identified. Quality control of market drugs, ethnobotanical studies, phytochemistry and pharmacology of these drugs have been discussed.

9206-3847 Holdsworth, D., Sakulas, H.(Chemistry Department, University Burunei Darussalam, Gadong 3186, Brunei, Wau Ecology Institute, box 77, WAU, Papua New Guinea) **High altitude medicinal plants of Papua New Guinea. Part II. Mount Wilhelm, Simbu Province.** *International Journal of Pharmacognosy*, v. 30(1): p. 1-4 , 1992 (25 ref, Eng).

Area covering Denglagu and Kegsugl villages on the slopes of Mount Wilhelm. (4509 metres, 14793 ft) in Papua New Guinea was investigated for plant species. Sixteen medicinal plants have been enumerated: Plant name, family, local name, uses, voucher number and references have been included.

9206-3848 Holdsworth, D.K.(Chemistry Department, University Brunei Darussalam, Gadong 3186, Brunei) **A preliminary study of medicinal plants of easter island, south pacific.** *International Journal of Pharmacognosy*, v. 30(1): p. 27-32, 1992 (12 ref, Eng).

Plants used in herbal medicine on Easter Island (Rapa Nui or Te-Pito-o-te-Henua in the Pacific Ocean) have been collected and identified. This is believed to be the first such record for the Rapa Nui people from this isolated Pacific island.

9206-3849 Horrigan, C.. **Complementing cancer care II.** *International Journal of Aromatherapy*, v. 4(1): p. 18-19 , 1992 (9 ref, Eng).

Aromatherapy may have a pleasent remedy to offer in the many problems associated with cancer. A number of essential oils and methods of using them and precautions have been disccussed. Oils discussed are rosemary, lavender, cedarwood, lime, geranium, lemongrass, cardamom, neroli, melissa, bergamot, juniper, rose, orange, marjoram, jasmin, ylang-ylang, clary sage, frankinceuse, petitgrain, grapefruit, rosewood.

9206-3850 Jasper-sen-Schib, R.(Schweizerisches Toxikologisches Informationzentrum, Postfach, CH-8030, Zurich, Switzerland) **(Spices- Actually how healthy are they?).** *Deutsche Apotheker Zeitung*, v. 132(13): p. 621-625 , 1992 (32 ref, Eng, Ger).

Botany, Chemistry and biological and toxicological properties of *Carum carvi,Foeniculum vulgare,Pimpinella anisum,Coriandrum sativum,Elettaria cardamomum,Piper nigrum,Schinus molle,S.terebinthifolius,Rhus toxicodendron,Capsicum,Curcuma longa,C.xanthorrhiza,Myristica fragrans* and *Crocus sativus* have been briefly reviewed.

9206-3851 Joseph, T., Naidu, R.(Indian Cardamom Research Institute, Kailasanadu P O., Myladumpara, Idukki District, Kerala 685 553, India) **Price structure of cardamom in India - an analysis.** *Journal of Spices and Aromatic Crops*, v. 1(1): p. 65-71 , 1992 (6 ref, Eng).

The seasonal phenomenon in the price of small cardamom along with the seasonality in related variables like sales at auction centres, export and export price are analysed. The interrelationship between market price and these variables is also studied. The analysis shows that the seasonal index of price was the highest in January and the lowest in July, while the seasonal index of market sales was the highest in November and lowest in July. The analysis shows that around 97 percent variation in yearly price can be explained by the two variables namely export and export price. The compound growth rates in production, export and prices during the period are also worked out.

9206-3852 Kastner, D(FIRMENIC SA, Geneve, Case postale, CH-1261 Givrins, Ch.Chatel Dessus, Switzerland) **(Perfumery industry by 2000. Part 1).** *Parfumerie und Kosmetik*, v. 72(12): p. 810-815, 1991 (Eng, Ger).

Only title translated.

9206-3853 Landis, P.S., Craver, R.H., Barton, D.E.(Chemistry Department, Glassboro State College, Glassboro, New Jersey 08028, USA) **Pyrolysis studies with jojoba oil.** *Journal of Agricultural and Food Chemistry*, v. 40(3): p. 456-57, 1992 (8 ref, Eng).

Jojoba oil *Simmondsia chinensis* syn. *Buxus chinensis*, a mixture primarily of eicosenyl eicosenoate and docosenyl docosenoate, was pyrolyzed via intramolecular elimination to produce dienes and fatty acids in the C18-C24 range. Temperatures of 350-400 degree C and reduced pressure are required to exclude thermal cracking to low molecular weight olefins.

9206-3854 Mahato, S.B., Nandy, A.K., Roy, G.(Indian Institute of Chemical Biology, 4, Raja S.C.Mullick Road, Jadavpur, Calcutta 700032, WB, India) **Review article number 67 triterpenoids.** *Phytochemistry*, v. 31(7): p. 2199-2249, 1992 (447 ref, Eng).

Triterpenoids isolated and characterized from various sources are reviewed. The newer techniques used in their isolation and structure elucidation, the newer skeleton triterpenoids characterized, chemical modifications and synthetic studies reported are discussed. A compilation of the triterpenoids isolated during the period 1982-1989 along with their occurrence, available physical data, spectroscopy and X-ray analysis used for their characteization, is included. The biological activities of the triterpenoids are also described.

9206-3855 Mosciano, G., Fasano, M., Michalski, J., Sadural, S. (Bush Boake Allen, 7 Mercedes Drive, Montvale, NJ 07645, USA) **Organoleptic characteristics of flavor materials.** *Perfumer & Flavorist*, v. 17(4): p. 33-36, 1992 (Eng).

Source, natural occurrence, odor characteristics, taste characteristics and suggested applications of 18 flavor materials including almond essence (natural), basil absolute (Egyptian), beta-caryophyllene, C-11 lactones (natural) and maltol have been given.

9206-3856 Olin, B.R. (ed)(Facts and Comparisons Division J.B. Lippincott Company, 111 West Port Plaza, Suite 423, St.Louis, Missouri 63146-3098, USA) **Betel nut- a monograph.** *Lawrence Reviews of Natural Products*, pp 1-2, May 1992 (12 ref, Eng).

Betel nut (*Areca catechu*) is used widely in many parts of the tropical world as a stimulent. Health professionals suspect betel chewing as a cause of changes in the oral mucosa, particularly in persons of Asian descent. Botany, history, chemistry, pharmacology and toxicology of areca nut have been briefly reviewed.

9206-3857 Olin, B.R. (ed)(Facts and Comparisons Division J.B. Lippincott Company, 111 West Port Plaza, Suite 423, St.Louis, Missouri 63146-3098, USA) **Ackee- a monograph.** *Lawrence Reviews of Natural Products*, pp 1-2, May 1992 (4 ref, Eng).

The ripe ackee fruit *Blighia sapida* is used traditionally in Jamaican cooking. However, the unripe fruit is toxic, causing severe hypoglycaemia, often accompanied by convulsions and death. Botany, history, chemistry, pharmacology and toxicology of the plant have been reviewed briefly.

9206-3858 Pachaly, P.(Pharmazeutisches Institut der Universitat, Kreuzbergweg 26, 5300 Bonn 1, Germany) (**Plant protectives in pharmacy: Pyrethrum**). *Deutsche Apotheker Zeitung*, v. 132(19): p. 1032, 1992 (5 ref, Ger).

Physical and chemical properties, products available, active constituents, toxicity, symptoms of poisoning, therapeutic uses etc.of *Chrysanthemum cinerariaefolium* have been briefly discussed.

9206-3859 Pachaly, P.(Pharmazeutisches Institut der Universitat Bonn, Kreuzbergweg 26,5300, Bonn 1, Germany) (**Plant protectives in pharmacy: Esfenvalerate**). *Deutsche Apotheker Zeitung*, v. 132(15): p. 775, 1992 (4 ref, Ger).

Chemical and physical properties, products, biological activity, distribution in plants, toxicity, poisoning symptoms, therapeutic uses etc of esfenvalerate have been briefly reviewed.

9206-3860 Schmidt, M.(Pfeiferstr. 15, 7407 Rottenburg, Germany)) **(Pure herbals or poisons).** *PTA Heute*, v. 6(4): p. 200-201, 1992 (Eng, Ger).

Only title translated.

9206-3861 Seeger, R., Neumann, H.G.(Institute f Pharmakologie und Toxikologie der Universitat, Verbsbacherstr. 9, W-8700 Wurzburg, Federal Republic of Germany) **(Encyclopedia of poisons- Cytisine).** *Deutsche Apotheker Zeitung*, v. 132(7): p. 303-306 , 1992 (52 ref, Ger, Eng).

Sources of this alkaloid, toxicity and therapeutic uses have been reviewed.

9206-3862 Stumpf, H., Spiess, E., Habs, M.(Dr Willmar Schwabe GmbH & Co., Willmar-Schwabe-Strasse 4, 7500 Karlsruhe 41, Germany) (**Medicinal plants- solutions and insolubles**). *Deutsche Apotheker Zeitung*, v. 132(11): p. 508-513 , 1992 (5 ref, Ger).

Only title translated.

9206-3863 Tekol, Y.(Department of Pharmacology, Medical Faculty, Erciyes University, Kayseri 38039, Turkey) **Aphrodisiac drugs from Ishaq Ibn Murad's manual.** *Hamdard Medicus*, v. 35(2): p. 105-107, 1992 (5 ref, Eng).

Fifty three plant species mentioned as aphrodisac drugs in the title book written in 792 AH/1390 AD in an Anatolian town, Gerede, Turkey have been enlisted.

9206-3864 Tisserand, R.. **Mint family matters.** *International Journal of Aromatherapy*, v. 4(1): p. 20-21 , 1992 (9 ref, Eng).

Various mints (Mentha spp.) and their active constituents along with the production data of the constituents (in N.America) have been enumerated. Cultivation, production and use of mint oils, in aromatherapy has been advocated. Mint oils are non-toxic but pharmacologically highly active essential oils.

9206-3865 Tyler, V.M., Tyler, V.E.*(Department of Medicinal Chemistry and Pharmacognosy, School of Pharmacy, Purdue University, West Lafayette, Indiana 47907, USA) **Academic genealogy of Arthur E. Schwarting, pharmacognosist.** *Journal of Natural Products*, v. 55(7): p. 833-844 , 1992 (16 ref, Eng).

Arthur E. Schwarting is the person primarily responsible for the conversion of pharmacognosy from a descriptive botanical discipline to a dynamic biological-biochemical science begining some 50 years ago.Some of the factors, that may have influenced his actions have been examined. Schwarting's professors and their professors were obviously an important element in this development.

New Publications

9206-3866 (Aromatherapy Publications, PO Box 746, Hove E, Sussex, England) **International Journal of Aromatherapy (English, ISSN 0962-4562.** (EnG, Eng).

Published quarterly by Aromatherapy Publications this journal started in 1988 exists for the benefit of those who have an interest in aromatherapy. The journal includes International news on aromatics, Conference Reports, Feature Articles, Research Reports, Latters and Book Reviews.

9206-3867 Ayres, D.C., Loike, J.D.(Cambridge University Press, Cambridge, UK) **Lignans, Chemical, Biological and Clinical Properties. Chemistry & Pharmacology of natural Products Series (Eng, 1990, XIX+402pp, $95.00, ISBN 0521-30421-0).** *International Journal of Pharmacognosy*, v. 30(2): p. 112, 1992 (Eng).

This is a comprehensive review of the chemistry and pharmacology of 440 naturally occurring lignans and also some semisynthetic derivatives etoposide and teniposide which are used in cancer therapy. the literature is covered through 1988. The book is divided into various chapters and botanical and general indices are provided.

9206-3868 Curtis, S., Fraser, R.(Pandora Press, UK) **Natural healing for Women: Caring for yourself with herbs, homeopathy and essential Oils (Eng, 418 pp., 7.99).** *International Journal of Aromatherapy*, v. 4(1):p. 35, 1992 (Eng).

This book gives information on how to use essential oils, homeopathic and herbal remedies for a wide range of ailments. Part 1 of the book covers body's systems and diseases, with a range of natural remedies to alleviate the ailment. Part 2. the Materia Medica gives details of each remedy. Thirty nine essential oils are included along with the methods of application. The third and final part is associated with our life style and self healing.

9206-3869 Glasby, J.S.(Taylor & Francis, London) **Dictionary of plants containing secondary metabolites (Eng, 1991, 488 pp., $209.00, ISBN 0-85066-423-3).** *International Journal of Pharmacognosy*, v. 30(1): p. 75 , 1992 (Eng).

This useful publication includes plants which have been reported to contain secondary metabolites. Its organization is by genus, each entry is of the format. Genus (family), species, compound type: name of compound, reference. The book is especially useful for those uninclined to perform search of Chemical Abstracts by genus name.

9206-3870 Miller, A.G., Morris, M.(Adviser for Conservation of the Environment, Diwan of Royal Court, Sultanate of Oman, Oman) **Plants of Dhofar: The Southern Region of Oman: Traditioanl, Economic and Medicinal Uses (Eng, 1989; XXVII+361pp., 156 col pls).** *International Journal of Pharmacognosy*, v. 30(1): p. 46 , 1992 (Eng).

This excellent and well illustrated large volume covers the cheif economic (including) plants of Oman. Altogether, 174 plants are described, arrangement is by plant family in alphabetical order. Also included are appendices: one gives a comprehensive list of plants known from Dhofar, another is a lexicon of Jibhali and Dhofari plant names; these are follwed by glossaries and index. It is a useful and beautiful publication which would benefit pharmacognosists, pharmacology its , phytochemists and botanists.

9206-3871 Price, S.. **Aromatherapy for common ailments (Gaia Books, English, pp95, 6.99).** *International Journal of Aromatherapy*, v. 3(1): p. 24-25 , 1991 (Eng).

This book is a guide with aim of introducing the use of essential oils in treating common ailments. It is divided into four chapters. The first deals with the histroy of aromatherapy, chemistry and effect of essential oils on body. Chapter two covers the practical applications of oils, chapter three is devoted to the therapeutic use of essential oils in the home and the fourth chapter gives an account of the use of essential oils for the relief of common health problems. The botanical names, the chemical constituents and the body systems on which a given oil acts are listed for each of the 12 oils which can be safety used at home.

9206-3872 Sellar, W.(C.W. Daniel Company Limited, UK) **Directory of Essential Oils (Eng. 180 pp., 8.95, $17.95).** *International Journal of Aromatherapy*, v. 4(1): p. 34-35 , 1992 (Eng).

This publication gives information on 81 essential oils including all the popular oils. Each essential oil discusses the history, chemical constituents, effect on skin and precautions. A useful blending chart is provided. A glossary lists the major medical properties of essential oils and lists those essential oils which share those properties.

9206-3873 Southon, I.W., Buckingham, J. (eds)(Chapman and Hall, London, New York) **Dictionary of Alkaloids 2 vols (Eng, 1989, $1295.00, XIVI+1161p. vol. I ix+620p, vol. II, ISBN 0-412-24910-3).** *International Journal of Pharmacognosy*, v. 30(2): p. 138 , 1992 (Eng).

This comprehensive collection of data is of great value. A prefactory section of 32 pages reviews the main types of alkaloids, following this is the alkaloids , approximately 10,000 compounds, arranged in alphabetical order of trivial names. Each entry includes a serial number, CAS no., graphic formula mol. form, mol wt., systematic name, colour, source of alkaloid, physical characteristic, pharmacological properties and references, followed by derivatives. The second volume includes indexes: name index, mol. formula index, CAS registry number index, type of compound index and the botanical names index by the binomial name.

9206-3874 Westwood, C.. **Aromatherapy- a guide for home use (Kerbina, English, pp 46, 1.99).** *International Journal of Aromatherapy*, v. 3(1): p. 25 , 1991 (Eng).

This is a quick reference guide to aromatherapy. For each of the 44 oils included, appropriate methods of use and the cautions which should be applied have been given. Two comprehensive indexes covering both physical and psychological conditions, are listed for appropriate treatment of the conditions.

Patents

9206-3875 Barbara, S., Bogumila, M., Zdzislaw, M., Halina, S., Jacek, O.(Politechnika Gdanska, Poland) **Method for preparation of individual furocoumarins from vegetable matter.** (Pol, Eng).

A chromatographic method in described in detail for obtaining various furocoumarins viz., Xanthotoxin, bergpten, imperatorin, isopimpinellin from vegetable matter such as seeds of Ammi majus parsnip, parsley.

9206-3876 Barbara, W., Mieczyslaw, B., Stanislaw, W., Kazimierz, J., Wieslaw, T.(Institut Przemyslu Zielarskiego) **Method of obtaining digoxin from leaves of Digitalis lanata Pol. Pl 143,815 (Cl. C07H), 1988, 11pp.** (Pol, Eng).

A method is described for isolating digoxin from *D.lanata*. The process involves enzymatic hydrolysis of lanatoside C obtained from leaves and then purifying the compound by making use of activated char coal. Detail procedure for the isolation and purification of the compound has been given.

9206-3877 Chikao, N., Koji, K., Yoshikuni, T. , Junichi, O. (Mitsubishi, Kesai Corporation, Japan) **Alkylsalicylic acid derivatives as antitumor, antifungal, and antibacterial agents and their isolation from Rhus javanica Japan Kokai Tokkyo Koho JP, 01,34,913 (Cl. A61.31/05), 1989, 6 PP.** (Jap, Eng).

Extraction of *Rhus javanica* with methanol followed by evaporation of the alcohol yielded a residue. The residue was taken in water followed by extraction with an ester solvent and subjected to chromatography to yield the compound alkylsalicylic acid (X=OH, OMe; y=COOH, methoxy carbonyl aldehyde, CH2OH, R=C15-17, 44 unsaturated alkyl; when X=MeO, Y=CooH, CH20H in the given structural formula) useful as antitumor antifungal and antibacterial agents. However, when (X=OH, y=COOH, R=pentadecyl in the given structural formula, invitro exhibited an IC50 of 6.7 micro g/ml against HeLa cells.

9206-3878 Hikino, H., Teruaki, H.(Kauei K K, Japan) **Skin cosmetics containing polysaccharides from rice bran, Japan Kokai Tokkyo Koho JP 01,66,106 (Cl A61 K7/00) 1989, 8PP.** (Jap, Eng).

Cosmetics contain 0.0001- 5.0 percent polysaccharides by weight. These polysaccharides were isolated from rice bran which are soluble in water but not in organic solvents viz., EtOH, Et2O, C6H6, CHCl3 and AcOEt. Also, the polysaccharides exhibits positive reactions in PhOH-H2SO4 test, anthrone- H2SO4 test, chromotropic acid - H2SO4 test, and in carbazole -H2SO4 test. The polysaccharides are very useful in conditioning and moisturing the skin. A detailed procedure for polysaccharides extraction from rice has been given.

9206-3879 Jerzy, L., Piotr, G., Krystyna, M. , Aline, M., Aleksander, J., Marian, M. , Jerzy, J., Elzbieta, C., Janine, R. (Instytut Przemyslu Zielarskiego) **Method of obtaining a biologically active sterols from Zea mays, Pol. Pl. 144,844 (Cl. A61K35/78), 1988, 11PP.** (Pol, Eng).

A method is described for the extraction of sterols for use in pharmaceuticals from the seeds, embryos, sprouts, and from silk of corn-Zea mays. The sterols which exhibited biological activity include, phytosterols (50 percent), tocopherols, triterpenes, vitamins and carotenoids. Details of the extraction of sterols has been given.

9206-3880 Kokichi, T.(Maruzen Chemical Company Limited) **Hair preparations containing saponin extracts from Sapindus (Japan Kokai Tokkyo Koho JP 01,68,307 (Cl. A61K7/06), 4PP.** (Jap, Eng).

Rind of *Sapindus mukurossi* or the extracts from *Sapindus delavayi* yielded antimicrobial saponins which are useful in hair cosmetic preparations. The saponins can be obtained by extracting with water and hydrophilic organic solvent. The hair preparation so obtained is useful, in controlling dandruff and pruritus. A detailed procedure for the saponin extract has been given.

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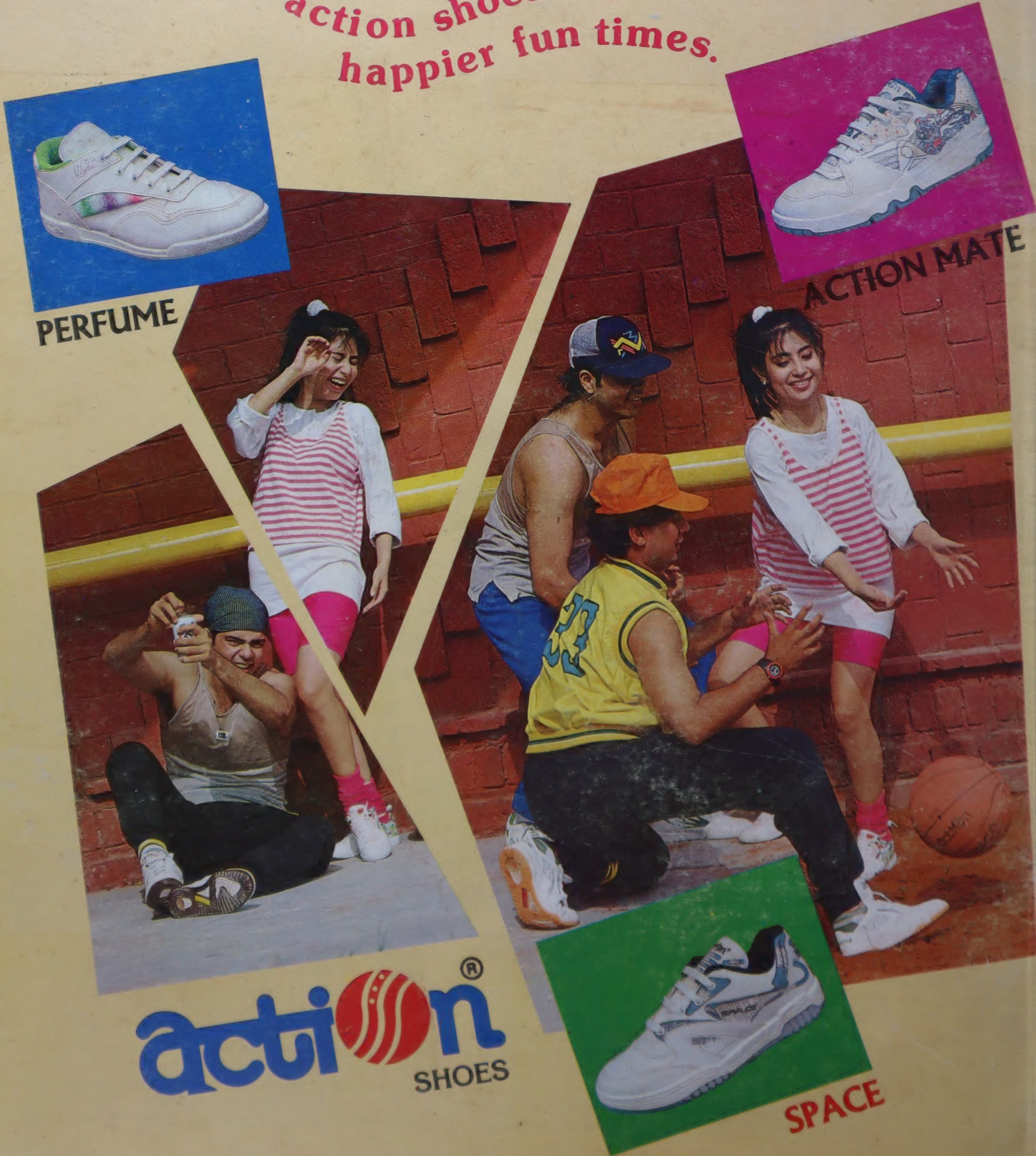
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